Speaking into the Abyss:

An Exploratory Study of Academics' Use of Educational Technology and its Impact on Practice.

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Table of Contents

Dedicated to Sinead, Seán and Aoife. You are my world in every sense.

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Abstract

This is a study of educational technology use in academic practice undertaken in an Irish Higher Education setting. Based on interviews with fifteen academics, the enquiry attempts to respond to Selwyn's (2010) call for an increase in social scientific accounts of technology use which pay heed to the 'state-of-the-actual', examining the actuality and consequences of technology use on academic practice and identity.

Efforts to understand the socially constructed nature of technology use draw upon the researcher's own varied experiences as an educational technologist, academic, and academic manager. The development of understanding is also guided by a theoretical framework drawn from Pierre Bourdieu's Theory of Practice (Bourdieu, 1977) and its interlocking concepts of habitus, field, and capital.

The key research questions addressed in the study highlight a varied and meaningful integration of technology into academic practice. Academic use of technology is shown to be strongly influenced by implicitly held knowledge of teaching and underlying belief systems which are shaped by assumptions, technological truisms, pseudo theories, and folk pedagogies. Technology use is also shown to be shaped by the surrounding organisational culture and the normative technological practices carried out within the academic disciplines.

In examining the consequences of technology adoption for the academic, the research highlights impact on wellbeing, relationships, emotional state, and sense of place. Technology is exposed as a site of tension as academics struggle with fears, questions of ideology, discourse, challenges to identity and destabilising shifts in practice.

Most importantly, the research exposes educational technology as a site of struggle. In an effort to mediate between agency and structure, these academics seek to hold autonomy over their own practices while also attempting to align their practice with the broader organisational culture of technology use. Tensions arise between academics, students, and academic management, as each group seeks power over what forms of technology are used, how they are used, and by whom they are used.

List of Abbreviations

ANT	Actor Network Theory
DIT	Dublin Institute of Technology
DMS	Document Management System
EdTech	Educational Technology
GDPR	General Data Protection Regulation
HEA	Higher Education Authority
HEI	Higher Education Institution
IoT	Institute of Technology
ITB	Institute of Technology Blanchardstown
ITT	Institute of Technology Tallaght
OECD	Organisation for Economic Co-operation and Development
TAM	Technology Acceptance Model
TEL	Technology Enhanced Learning
TIM	Technology Integration Matrix
TIP	Technology Integration Planning
TPACK	Technological Pedagogical and Content Knowledge
TU	Technological University
TU Dublin	Technological University Dublin
QDAS	Qualitative Data Analysis Software
QQI	Quality & Qualifications Ireland
RAT	Replacement Amplification Transformation
RLO	Reusable Learning Object
RTC	Regional Technical College
SAMR	Substitution Augmentation Modification Redefinition
SCOT	Social Construction of Technology
MOODLE	Modular object-oriented dynamic learning environment
VLE	Virtual Learning Environment

List of Figures

List of Tables

CHAPTER 1 | Introduction

1.1. Background to the study

This is a study of educational technology use in academic practice undertaken in an Irish Higher Education setting. Based on interviews with fifteen academics from a variety of academic disciplines, the thesis examines the actuality of technology use, generating an understanding of its effect on academic practice and the surrounding educational milieu. The study is conducted in a higher education environment which now sees digital technology deeply embedded into teaching and learning (Selwyn, 2016a), a consequence of ongoing pressure from state and institutional policy, increasing student demand, diminishing resources, and rapidly evolving technology platforms (Laurillard, 2008a). Technology is presented as both a cause and a driver for change in higher education (Clegg et al., 2003) with academics expected to integrate technology into all aspects of their scholarly practice (Scanlon, 2014; Weller, 2011). And yet there remains a dearth of qualitative research focusing on the experience of technology use in practice and its effect on identity (Lupton et al., 2018; Torrisi-Steele and Drew, 2013; Clegg, 2011; Hanson, 2009). In response, this qualitative research study seeks out an understanding of academic technology practice through the application of a critical sociological lens which recognises educational technology use as 'political processes and practices that are best described in terms of issues of power, control, conflict and resistance' (Selwyn, 2010, p.68). The enquiry attempts to move beyond commonly encountered instrumentalist accounts of technology (Bayne, 2015; Hamilton and Friesen, 2013; Selwyn, 2012a) and seeks to understand the structuring social forces which shape academic technology practice in the higher education setting.

Although it has been suggested that academic practice remains largely unchanged as a result of educational technology (see Price and Kirkwood, 2014; Plesch et al., 2013; Conole, 2010; Blin and Munro, 2008), this thesis proposes that the opposite is in fact true, and that academic practice is undergoing significant disturbance and change linked to the ongoing digitisation of higher education. Participants highlight a rich and varied application of educational technology that has gradually altered both the means and the method by which scholarly work is undertaken. However, in adopting emergent digital tools and new spaces of practice, academics experience the destabilising effects of technology that challenge the individual's sense of identity and long-held conceptions of didactic teaching. The ongoing digitisation of practice raises issues of belonging, immediacy, depersonalisation, disembodiment, and pedagogic failure. For some participants, the challenges of technology adoption have contributed to a deteriorating work-life balance, negative emotional experiences, and moments of personal crisis.

Through the application of a series of Pierre Bourdieu's conceptual tools, academic practice is examined under the themes of power, control, conflict, and resistance. The use of Bourdieu's concepts exposes technology as a site of competitive struggle and ideological tension. Influenced by policy and neoliberal discourse, the internal technopositivist (Njenga and Fourie, 2010) culture of the organisation disempowers academics who challenge the orthodoxy of technology use. Academic propensity for the utilisation of technology is countered by a fear and mistrust of management intent, with technology recognised as a tool for the potential neoliberal transformation of the institute and academic practices within it. Academics seek to negotiate the demands of students and expectations of management in a process of technology adoption which may ultimately draw them further into a culture of performativity (Ball, 2012) and expose them to the 'hidden injuries' (Gill, 2009) of the digitised practice space.

1.2. Research Context

Eight trillion dollars by 2025. As an educator, I often feel a sense of revulsion when I see charts like the one shown in Figure 1 (below) which describe education as an ‘industry’. And yet for many, that is exactly what education represents, a global industry which like others, affords opportunities for commercial gain and profit through processes of commodification. A key component of this ‘global education industry’ (Verger et al., 2017) is the

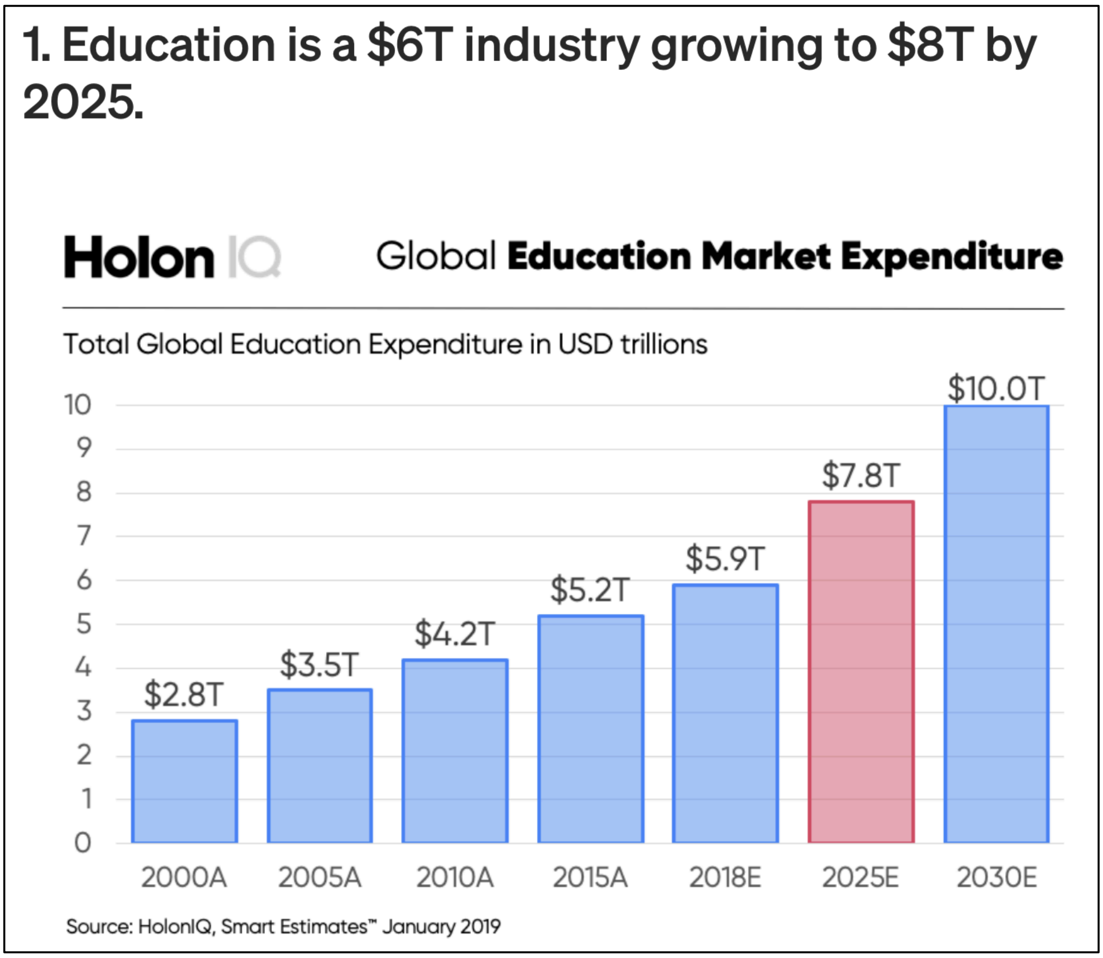

Figure 1 - The Global Education 'Industry'

educational technology sector. This sector is made up of a burgeoning array of technology providers seeking to gain a greater share of a global educational technology market which is predicted to grow to a value of over four hundred billion dollars by 2025[1]. The activity of this sector is evidenced by the increasing

[1] Overall estimates for the value of the educational technology market differ. For example, MarketsandMarkets (https://www.marketsandmarkets.com/PressReleases/educational-technology-ed-tech.asp) estimate a value of USD 85.8 billion in 2020 to USD 181.3 billion by 2025. Holon IQ estimate a 2019 value of USD 163 billion rising to USD 404 billion in 2025. Covid-19 has brought about a ‘$63B upgrade’ in educational technology markets

influence of a range of technology companies on the everyday processes and practices of higher education. Companies such as Microsoft, Google, Zoom, Pearson, Adobe, CISCO, Blackboard, and others, have become part of the language and landscape of educational provision. These trans-national companies seek to provide higher education institutes with a range of solutions in course management, online teaching platforms, student assessment, educational content, student information systems, analytics, and much more. Technology presents vendors with opportunities for ascribing monetary values to higher education process and practices, enabling a transformation of universities, students, and staff, into 'calculable objects' (Williamson, 2020). Even data, once thought of as a by-product of educational technology use, becomes a thing of monetary value, repackaged, analysed, and sold as either an analytical tool for bettering our understanding of our educational processes, or as a proxy for neoliberal metric governance (Williamson, 2019a; Komljenovic, 2020; Williamson et al., 2020).

Civil actors also play a key role in stimulating the global educational technology market, with international non-governmental organisations (INGOs) such as the 'The Right to Education Project, the Soros Open Society Foundations, and the Global Initiative for Economic, Social and Cultural Rights' (Gallagher and Knox, 2019, p.226) playing a key role in instilling global north values into global educational systems:

> *…education as an 'global' endeavour, rooted in economic rationales for workforce training and human capital, and maintaining a universalist discourse that tends to normalise the educational cultures from which the technologies have been developed. Too often this technology is framed as a transparent instrument for educational export, keeping curricula, pedagogy, and educational values intact whilst they are broadcast to a*

(https://www.holoniq.com/notes/global-education-technology-market-to-reach-404b-by-2025/).

global population assumed to be in deficit. With often alarming ease, this kind of digital education is presented as an agent of liberation from cultural, social, economic, or political restraints…

(Gallagher and Knox, 2019, p.226)

Many of these private and public actors promote technology through the narratives of solutionism (Morozov, 2013) and the premise that technology can solve issues that we inside education didn't even know existed. For higher education, the narratives of solutionism originate in the policies and commentaries of transnational organisations such as the OECD and European Union (EU), who are deeply critical of Irish higher education and its efforts to utilise educational technology. For example, the 2016 OECD commentary notes that Irish higher education "has not managed to harness technology to raise productivity, improve efficiency, increase quality and foster equity in the way other public sectors have" (OECD, 2016, p.31). Calls for technology as a solution to issues of productivity, modernisation, and efficiency converge with broader discourses of digital disruption (Selwyn, 2013a), enhancement (Kirkwood and Price, 2014), and digital nativism (Thomas, 2011), to create an orthodoxy of technology use in higher education. As we shall see in chapter 2, a logic of technology use is negotiated, reworked, and communicated through a policy network consisting of a series of actors, including the state, the higher education authority (HEA), the national forum for the enhancement of teaching and learning (National Forum), and individual higher education institutions. Declarations of intent pointing towards the creation of 'digital' futures and promises of redefined digital educational experiences seek to transform academic practice through changes in the means by which teaching is carried out and how it is experienced. Hence, we see considerable financial investment in educational technology and efforts to reorientate academic practice to align with vision and policy. However, longstanding efforts to transform academic practice through technology adoption seem to be falling short of expectations, with the National Forum noting a systematic failure to fully utilise digital educational technology in Irish higher education (National Forum, 2014).

The apparent lack of academic practice change appears counter logical to the outputs of a field of educational technology research that promises a great deal. Educational technology research is an essentially 'positivist' project (Selwyn, 2013b) which is predicated on the promise of enhancement to teaching and learning (Goodchild and Speed, 2019; Selwyn, 2016b). While much of the existing body of research makes claims to enhancement, these claims are facing increasing critical scrutiny (Kirkwood and Price, 2014) as research in the field is accused of being overly deterministic (Clegg, 2011; Friesen, 2008), suffering from problems of methodology and rigour (Kirkwood and Price, 2013a), focusing too closely on technology (Oliver, 2011), and paying insufficient attention to the social, cultural and political considerations of technology adoption (Castañeda and Selwyn, 2018). Research in the field appears overly fixated on instrumentalist accounts of technology which concentrate on experiences and outcomes for learners.

While research from the field consists of many accounts of what academics *should* be able to do with technologies and what they *could* be doing with technologies, there is a lack of focus on what they *are* doing with technologies and their *experiences* of technology use. In highlighting this gap, Selwyn (2010) argues that the body of knowledge would be enriched by a greater level of critical enquiry carried out along social scientific lines, which might focus on the actuality of technology use. He suggests three forms of guiding questions for such research:

> *These questions fall broadly into three basic forms, i.e.: What is the use of technology in educational settings actually like? Why is technology use in educational settings the way it is? What are the consequences of what happens with technologies in educational settings? As these deceptively simple questions imply, the critical analysis of technology (non) use*

> *approaches educational technology as a site of ongoing negotiation and, often, intense social conflict and struggle.*
>
> (Selwyn, 2010, p.70)

Guided by these simple questions, this enquiry seeks out an understanding of the actuality, the effect, and the rationale for educational technology use. Contrary to critical commentary and opinion, it will posit that academic labour is undergoing change resulting from the use of technology in practice. In responding to calls for the increased utilisation of theory in the study of educational technology, this thesis will demonstrate the applicability of Pierre Bourdieu's theory of practice (Bourdieu, 1977) in the consideration of educational technology use. The empirical application of Bourdieu's theoretical concepts in efforts to understand the socially constituted nature of academic technology practice makes a novel contribution to the field of educational technology. It does so by highlighting the importance of considering the interplay between individual dispositions, the culture and normative practices of the social space, and the forms of technological capital, which combine to influence academic technology adoption and ongoing practice. Bourdieu's lenses also allow this study to see technology as a site of struggle, a contested space between academics, management, students, and societal forces who seek to transform and legitimise new forms of academic practice and identity.

1.3. Research Questions

Taking its inspiration from the provocations of Selwyn (2010), this enquiry aims to explore the lived experiences of a sample of academics with regard to educational technology, generating understanding of its effects on their practice, exploring their beliefs as they relate to technology, and interrogating their understanding of how the use (and non-use) of technology affects their educational setting. It will pay particular heed to the influence of the surrounding socio-cultural space in which practice is constituted and from which the academic and technology cannot be separated (Bayne, 2015).

To meet the aims of the enquiry, the research considers five key research questions which are now outlined:

1. **How has educational technology influenced the practice of academics?**

   There appears to be a disparity between the promises of educational technology and the actuality of impact (Kirkwood and Price, 2013a; Price and Oliver, 2007), particularly with regards to its effect as a heralded transformative influence on academic practice (Price and Kirkwood, 2014; Plesch et al., 2013; Conole, 2010; Kirkwood, 2009; Blin and Munro, 2008). This research question supports an enquiry into the 'state-of-the-actual', an understanding of how technology is being used – 'for better and worse' - in academic practice (Selwyn, 2010, pp.69–70). Influences on practice will be interpreted through academic accounts of technology use and perceptions of practice change. In examining impact on practice, the enquiry will consider the multifaceted nature of academic practice which encompasses research, scholarship, supervision, academic administration, and management (Fry et al., 2009).

2. **What values and beliefs do academics hold regarding the use of educational technology in practice?**

   There remains something of a deficiency in studies which seek to interrogate academic beliefs as they relate to the use of technology in higher education settings (Heinonen et al., 2019). Beliefs and values play a key role in shaping approaches to teaching (Pajares, 1992; Nespor, 1987) and are an essential consideration in understating barriers to technology adoption (Ertmer, 1999; Ertmer, 2005). The interrogation of participant beliefs and values moves us towards an understanding of participant philosophies of teaching and technology which shape how technology is utilised in practice (Kanuka, 2008). As well as seeking out fundamental beliefs as they relate to teaching and learning with technology (Kim et al., 2013), the enquiry also seeks insights into technology related beliefs and values as they are shaped by wider socio-cultural influences.

3. **What are the perceived effects of educational technology?**

   Selwyn asks the researcher to consider the 'consequences' of technology use in educational settings (Selwyn, 2010, p.70). Too often, considerations of educational technology's effect suffer from an over-concentration on the technology itself (Bayne, 2015; Oliver, 2011) as well as shortcomings in approach and evidence gathering (Kirkwood and Price, 2013a). We must move beyond simple instrumentalist perspectives in our efforts to understand the effect of technology. For example, there is a notable lack of research on the 're-making' of academic identity by technology (Clegg, 2011) and the effect that technology may have on academics own conceptualisations of their identity and role. Likewise, technology's emotional impact is under-researched (Bennett, 2014) and merits greater attention. In posing this question, the enquiry aims to broaden the consideration of effect, seeking insights into the effect of technology on practice, identity, the self, students, and the wider educational environment in which practice is constituted.

4. **What difficulties and tensions do academics report in their use of educational technology?**

   Critical commentators frame technology as a contested space, a site of tension and conflict. Feenberg describes technology as 'a scene of struggle....a social battlefield' (Feenberg, 2002, p.15), while Selwyn points us towards considerations of 'power, control, conflict, and resistance' (Selwyn, 2015). In examining academics lived experiences of technologies, what struggles, tensions, and conflicts (if any) have they experienced? As well as potential struggles with their own identities and sense of place, have academics experienced conflict and struggle with their students, academic colleagues, or management? How have these tensions impacted their adoption and use of technology?

5. **What factors influence academics in their decisions to adopt educational technology?**
   Technology adoption is a complex process influenced by both individual and social factors (Straub, 2009). While individual factors such as beliefs, values and ideologies play an important role, so too does the surrounding social space, its culture and normative practices (Rogers, 2010). This enquiry seeks to understand the key influential factors which guide academics in their use of technology, viewing technology practice as both individually and socially constituted.

1.4. Approach to the study

The above research questions are explored through a small-scale qualitative enquiry which takes place at a single site of study (described later in this chapter) located within the Irish higher education sector. The enquiry adopts a case study approach to the research (Yin, 2009; Yin, 2011), allowing for in-depth consideration of the 'subtleties and intricacies' (Denscombe, 2010, p.62) of a single higher education organisation, its culture, and the experiences of a sample of academics working within it. The selected site of study is my own place of employment, and I therefore adopt the role of the *insider researcher*, a stance which has gained popularity in educational research and one which offers many advantages to the researcher (Greene, 2014). The research approach utilises semi-structured interviews in seeking rich 'thick' descriptions (Geertz, 1973) of the participant's lived experiences, their beliefs and values, and their conceptualisations of teaching with technology. The accounts of the fifteen participants selected via a purposeful sampling strategy were analysed using NVIVO qualitative data analysis software (QDAS). Thematic analysis was adopted as a way of 'seeing' and making sense of the data (Boyatzis, 1998) and identifying key themes for discussion. An in-depth discussion of the research approach, including my ontological and epistemological positioning as a researcher, is laid out in chapter 4.

Theory is an important but neglected aspect of educational technology research (Bennett and Oliver, 2011; Issroff and Scanlon, 2002), and this enquiry aims to contribute to a category of studies that are unpinned by sociological theory. In this enquiry, the interrogation of lived experience is understood through examinations of practice and the influences of the surrounding socio-cultural space. Pierre Bourdieu's Theory of Practice (Bourdieu, 1977), using the interlocking and well-known concepts of 'habitus', 'capital' and 'field', is utilised in my attempt to understand technology use as socially constituted with both the academic and technology inseparable from the surrounding social milieu. The use of Bourdieu's concepts as 'thinking tools' moves the study beyond a simple questioning of what academics 'do' with technology and instead moves us towards considerations of systems and structures, social and cultural relations, and the meaning of practice to the individual (Beckman et al., 2018, p. 198). An in-depth discussion of the theoretical approach taken to the study and its rationale for use is described in chapter 3.

1.5. Researcher Positionality

Qualitative researchers bring values to a study, position themselves within a study, acknowledge the value-laden nature of the study and may disclose axiological assumptions using tools such as reflective biography (Creswell, 2007, p.20). Researcher values, positions and bias should be brought to the fore through a process of reflexivity in which the researcher turns the lens back onto oneself in an effort to recognise and take responsibility for one's situatedness within the research. Researcher values may affect the framing of the research, the selection of paradigm, the choice of substantive theory, choice of methods, approach to data gathering and the interpretation of data (Berger, 2015; Guba and Lincoln, 1982). Understanding researcher positionality is particularly important for the insider researcher who seeks to interrogate their social group or setting (Greene, 2014). To assist the reader in understanding my positioning as an insider researcher, I now offer a short biography as it relates to this study.

The eldest of seven children, I was the first child in my family to enter higher education, graduating from the local Institute of Technology in Tallaght in 1999 with a MSc in Computing via research. My research focused on the potential use of multimedia and internet technologies in distance education, carried out at a time when distance education provision was beginning to transition away from analogue media in its movements towards emerging digital platforms. I graduated during the height of the dot.com bubble and quickly found myself employed in a senior position within a large multinational educational technology company. My success was inextricably linked to technology and somewhat unsurprisingly, I developed a strong disposition and bias for the use of educational technology, advocating for its utilisation in a range of societal settings.

In September 2002, I followed my heart and left industry to peruse a career in academia at the Institute of Technology in Blanchardstown (ITB), Dublin. Although employed as a lecturer in informatics, my knowledge of educational technology was soon leveraged, and I adopted the dual identity of teaching academic and educational technologist (Oliver, 2002). While the teaching facet of my professional identity was clearly demarcated, the educational technologist side, like other technologists in the higher education sector, was ill-defined and poorly understood despite its strategic importance in driving institutional change (Gornall, 1999). As is common in the educational technologist space, my role evolved from change agent at the individual level to the management of strategic change at the organisational level (Fox and Sumner, 2014), working with academics and a range of other functions of the institute. Over the course of the next fourteen years, I took responsibility for the institute's educational technology strategy, introducing virtual learning environments, online teaching platforms, video and lecture capture systems, assessment systems, and a host of other technology-led interventions. The duality of the role brought with it a host of intrinsic and extrinsic rewards. Enjoyment and satisfaction were mixed with career progression, an increase in profile, and research funding. My continued success nurtured my strong technopositivist perspective on technology (Njenga and Fourie, 2010), and at that time, I viewed technology through a lens of affordance (Conole and Dyke, 2004), concentrating on the 'potential' and the 'how' of technology rather than the 'why'. In taking an instrumentalist perspective of technology, I paid scant attention to technology's wider effects on individuals or the surrounding socio-cultural environment. Gripped by a form of 'techno-fundamentalism' (Vaidhyanathan, 2012), I unfairly perceived critics and non-adopters as Luddites and held a genuine belief that the technologies I had introduced were mainly beneficial in their effect. I subscribed to and espoused the dominant educational technology discourses of modernisation, access, flexibility, and the enhancement of learning.

In 2017, one year after I began my studies in Maynooth, my career path changed course again as I took on a role in academic management. In taking on the Head of Department of Informatics position, I found myself managing 40 of my colleagues and a suite of academic programmes ranging from computer science to creative arts. During this time, I managed to maintain elements of my much-loved teaching and supervisory practice, as well as some involvement in the strategic management of technologies at the new University. Hence as an insider researcher, I may leverage my perspectives and understanding of what it means to be an academic, what it means to be an educational technologist, and most recently, what it means to be an academic manager. While I am doubtful that it a truly unique perspective (although I am unaware of others in my sector), it is a perspective that affords me an understanding of technology on multiple levels. These perspectives represent my changing identities and experiences, and they have helped me in my approach to all aspects of this study.

An industry-based professional, an academic, a learning technologist, and an academic manager. As I have moved through these various overlapping stages of my career, I have found myself adopting a more critical view of my own educational milieu. During my career, I have witnessed the continued redefinition of higher education as a market commodity (Lynch, 2015) and the diminishing of the public service etic. I have become more critical of the 'McDonaldization' of education and the sectors growing fixation on efficiency, calculability, predictability, and control (Ritzer, 2011). I have voiced my concerns regarding the restructuring of Irish higher education and criticised the economic rationale behind the reconstitution of Irish Institutes of Technology into Technological Universities (Darby et al., 2017). With respect to my own teaching environment, I have noted the greater emphasis which is now placed on research at the expense of teaching, with career progression now measured using metrics that appear to have little to do with student success (Carpenter et al., 2014; Gruber, 2014; van Dijk et al., 2014). I have felt the gradual shift from 'education' to 'learning' (Biesta, 2004), resulting in the emergence of the individualised learner who views education as a commodity, a means to take their place in the competitive and global knowledge economy (Burke and Jackson, 2007). While I remain deeply passionate about the role of higher education, its societal value, and its transformative effect on the individual, I have a growing pessimism regarding its future orientation and ethos.

In recent times I have questioned the role of technology in supporting some of these changes. My naïve preoccupation with the evangelism and propagation of the orthodoxy of technology has perhaps blinded me to its effects on the lived experience of my colleagues, its effect on the attitudes and engagement of our students, its transformative effect on the institution, and its role in the marketisation of higher education. I have not become cynical (not yet). However I have recently come to recognise the need for counter-discourses that might offer necessary critical challenge to the overly positivist orthodoxy of educational technology, an orthodoxy which I have helped to establish in my own educational setting. In particular I have grown sceptical of the language of educational technology and support Selwyn's call for a counter-lexicon to challenge the 'bullshit' nature of EdTech speak (Selwyn, 2016c). While I remain somewhat of an advocate of educational technology, I believe that a combination of dominant discourses and stale truisms supports an uncritiqued educational technology hyperbole that contributes to the continued neoliberal transformation of our educational settings. Academic agency appears diminished by claims to the determining nature of technology (Kirkwood, 2014; Clegg et al., 2003), claims which are used to underpin supporting discourses of modernity, access, flexibility and efficiency. I also hold the view that while a great deal of research produced by the Irish EdTech community is of significant value, there remains lingering issues of determinism (see Oliver, 2011), academic rigour (Kirkwood and Price, 2013a), and unsubstantiated claims of enhancement (Hamilton and Friesen, 2013).

In offering this reflection, I have attempted to provide some explicit insight into my biography, which may influence my approach to the research. In chapter 4, I add to this biography by providing the reader with an overview of my ontological and epistemological positioning. I also provide an insight into a number of strategies adopted to ensure that my own positioning and bias did not negatively influence my interpretation and reporting of the research.

1.6. The site of study

The Irish higher education system is made up of a mix of state-funded universities, institutes of technology, colleges, and a small number of private institutions (Loxley, 2014). Despite this diversity in organisational type, it is often described as a binary system, consisting of the Universities on one hand, and the Institutes of Technology (IoT) on the other (Walsh, 2018). This traditional divide was altered by the publication of the *Technological Universities Act* (2018), which established a framework for the creation of a new type of higher education institution (HEI), namely Technological Universities, which could be established through the merging of two or more existing institutes of technology. The rationale for the development of a new category of HEI was established in 2011 through the publication of the *National Strategy for Higher Education to 2030* (Department of Education and Skills, 2011), an attempt to rationalise and reconfigure the Irish higher educational landscape at a time of austerity (Walsh and Loxley, 2015), marked by a focus on public sector reform and economic imperative (Harkin and Hazelkorn, 2015). Existing IoT's were moved towards mergers through a combination of political pressure, the imposition of new funding regimes, and the lure of coveted university status (Hinfelaar, 2012). In January 2019, three Dublin based institutes of technology, namely the Institute of Technology Blanchardstown (ITB), the Institute of Technology Tallaght (ITT), and the Dublin Institute of Technology (DIT), merged to form Technology University Dublin (TU Dublin), Ireland's first technological university. This merger created the country's largest third-level institution with a student population of circa 28,500 (O'Brien, 2019) attending campuses in Blanchardstown, Tallaght, and Dublin city centre.

The site of study was the former Institute of Technology Blanchardstown, now a constituent element of TU Dublin. ITB was established in 1999 and located in Dublin, Ireland. Named after the large outer suburb of Dublin in which it was located, its mission was to increase 'the level of third-level participation in the Dublin North-West and its environs' while ensuring that a relatively high proportion of its students were 'non-standard entrants' including students with disabilities and students from disadvantaged socio-economic backgrounds (ITB, 2005). It could be categorised as a small higher education institute with an academic staff of 127 full-time equivalents and a student population of 2,757[2]. Delivering both full-time and part-time programmes, the institute had been

[2] Publicly available statistics for 2018/2019 which relate to ITB student enrolments, funding, governance and performance are available on the Irish Higher Education Authority website at: https://hea.ie/statistics/

granted delegated authority from Quality & Qualifications Ireland (QQI) to make awards to suitable candidates from NQF level 6 (certificate) to level 10 (Doctorate)[3]. Primarily a teaching institute, ITB offered a range of full and part-time programmes across several disciplines including computing, engineering, business, horticulture, accounting, sports, media, social care, childcare, as well as apprenticeships in trades such as electrical and plumbing. The institute's academic management structure was similar to that of other Institutes of Technology in Ireland and consisted of posts at President, Registrar, Head of School (Senior Lecturer III), and Head of Department (Senior Lecturer II) level. The institute's students and academic staff were structured into three schools: The School of Informatics and Engineering, the School of Business, and the School of Humanities.

The timing of the institute's merger into TU Dublin is notable as it intersected the study's timeframe of fieldwork and data collection, which ran from October 2018 to March 2019. As such, it was a site of transition in its designation and governance, and its identity and future direction. The institute was to become a constituent part of a much larger new university whose 2018 application for designation was notable for the prominence given to technology in its vision for academic provision. The proposed new university was described as a 'digital-first organisation' based on the concept of a new 'digital campus' which would put the university 'on a par with the world's best performing, blended-learning higher education providers' (TU4Dublin, 2018, pp.54–55).

For the most part, the site of study is referred to by participants as 'the institute'. The reader may occasionally note the references to 'university' and 'campus' which is indicative of the transitionary space in which the study took place.

[3] Ireland operates a national qualifications framework which is a formal system describing educational qualifications. Details are available online at: https://www.qqi.ie/Articles/Pages/National-Framework-of-Qualifications-(NFQ).aspx

1.7. Differing academic roles in Irish Higher Education

As previously outlined, the Irish higher education system, while small by international standards, is quite diverse, consisting of a number of differing categories of institutions (Clarke, Kenny, et al., 2015). A system which features a mix of universities, technological universities, institutes of technology, colleges, and a small number of private institutions, brings with it a variety of differing academic roles and nomenclature. The majority of academic roles across the publicly funded higher education sector are defined through legislation via the 1997 Universities Act and the 2006 Institute of Technologies Act (Loxley, 2014)[4]. There exists a degree of commonality between the respective academic grades in both Universities and IoT's, with new academics typically commencing as 'assistant lecturers', 'junior lecturers' or 'below the bar lecturers' (Lalor, 2010). While the lecturer and senior lecturer grades are also common to both Universities and IoT's, there is some divergence in senior academic career pathways. Whereas academics working in the Irish university system may progress to associate professor, and professor grades, those working in the IoT sector may progress through a series of senior lecturer grades[5].

The differences between the universities and IoT's in terms of academic nomenclature is somewhat reflective of the historical background of both types of institutions and the development of the academic role within each. Historically, Irish universities provided degree and postgraduate education while the Regional Technical Colleges (RTCs), established in Ireland in the 1970's (Kintzer, 1981), aimed to provide sub-degree programmes typified by a strong focus on technical education (Clarke, Kenny, et al., 2015). The creation of a binary higher education system in the 1970's established a clear distinction

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[4] While the recent addition of the Technological Universities Act has somewhat altered the traditional binary nature of the Irish HE sector, the academic contracts for staff in TU's remain closely tied to the nationally agreed academic contracts of the Institute of Technology sector.

[5] Those occupying Senior Lecturer 1 positions (Sl1) are typically engaged in teaching and research, while SL2 and SL3 grades are typically involved in the management of academic departments and schools respectively (Loxley, 2014).

between the vocational functions of the regional technical colleges, and the research centric missions of universities (Walsh, 2018). This distinction was somewhat blurred by the late 1990's when the majority of regional technical colleges were redesignated as Institutes of Technology through the Institute of Technology Act 1998 (Clarke, Kenny, et al., 2015). The ongoing dissolving of boundaries has been furthered through government strategy which has increasingly prioritised the economic mission of Irish universities while also seeking to transform research activity in the IoT sector (Walsh, 2018). The recent establishment of Technological Universities through IoT mergers has again distorted the traditional divide.

Academics working in the IoT sector are distinguished from their university colleagues in a number of interesting ways. In the IoT sector, the role of an academic is delineated in terms of classroom contact hours across a given academic year, with standardised workload models prioritising teaching over other academic activities (Clarke, Drennan, et al., 2015; O'Byrne, 2011; Hazelkorn and Moynihan, 2010). Contact hours are predominantly allocated to teaching hours with a teaching requirement of between 560 and 630 hours over a 35-week period (Higher Education Authority, 2014). Academic staff in IoT's will typically have a far higher teaching load then their university counterparts and will spend more time teaching undergraduate classes (Clarke, Kenny, et al., 2015). While research activity in IoT's has increased, we find significantly higher levels of research activity in the university sector (Loxley, 2014; Hazelkorn and Moynihan, 2010) with academics in Universities far more likely to hold a doctoral qualification (Clarke, Drennan, et al., 2015; Clarke, Kenny, et al., 2015; Higher Education Authority, 2020). Thus, while academic work within the universities is widely accepted as comprising of the three components of teaching, research and service (Hazelkorn and Moynihan, 2010), academic staff employed in IoT's remain predominantly focused on teaching provision. Teaching allocations are normally in support of undergraduate and postgraduate programmes, continuing professional education programmes, or research supervision at masters and doctoral level. While academic staff in the IoT sector are expected to be involved in research and service activity (Hazelkorn and Moynihan, 2010), growing demands for adjusted workload models in line with academic conditions in Irish Universities have largely been ignored.

1.8. Thesis Structure

Following this introductory chapter, **chapter 2** provides an exploration of the literature related to the aims of the study. This exploration begins with a consideration of the field of educational technology and its varying lexicons. The chapter foregrounds the rationale for the critical approach taken to the study and offers key insights from a range of critical scholars. Literature that links technology to the concepts of determinism and neoliberalism is also explored. A summation of Irish higher education technology policy is also offered. The chapter concludes with an examination of the literature related to the topics of belief and identity and their relevance to technology use in practice.

Chapter 3 describes the approach taken to the use of theory in the study, beginning with a summation of a body of literature that is critical of the underutilisation of theory in educational technology research. The chapter provides an explanation for the application of Pierre Bourdieu's Theory of Practice (Bourdieu, 1977), which makes use of the interlocking and well known concepts of 'habitus', 'capital' and 'field'. The chapter also offers a rationale for an approach to research that aims to move beyond essentialist and instrumentalist accounts of practice, instead framing educational technology as socially constituted, inseparable from the surrounding social milieu.

Chapter 4 describes the methodological approach that shapes the enquiry, locating the research within the interpretivist paradigm. To assist the reader in understanding my role in the research, I outline my own positioning as a researcher and provide some insight into my ontological and epistemological perspectives, which have influenced the research design. The chapter then offers a rationale for the adoption of a case study methodology and provides insight into participant selection strategies, research methods, data analysis, ethical considerations, and trustworthiness.

The reporting of the findings is divided across **chapters 5 and 6**. These chapters place a deliberate focus on the presentation of the participant narratives as they relate to the core themes of the enquiry. Participants provide insight into the use of technology in practice, imperatives for the use of technology, key struggles and tensions in their use of technology, and perspectives on the roles played by staff and students in the influencing of individual practice.

Chapter 7 offers a discussion of the key findings, linking participant voices to the existing body of knowledge. The chapter illustrates a rich and varied use of educational technology across various practice spaces driven by a dominant hegemony of technology that is influenced by the organisational culture, its discourses, and logics of practice.

Chapter 8 recognises the socially constituted nature of technology practice and a need to understand the socio-cultural contexts in which technology practice is situated. This chapter approaches the findings from a more focused sociological perspective adopting Pierre Bourdieu's Theory of Practice (1977) in an effort to broaden our understanding of academic technology use and its effect on practice. The chapter attempts to bring greater focus to the effects of policy, discourse, power networks, organisational cultures, shared beliefs, and agents who influence individual and collective academic technology practice.

The thesis concludes with **chapter 9**, which opens with a reflection on the guiding research questions in an attempt to draw together the key findings and points of discussion. I also use this chapter to reflect on my own multifaceted role as an educational technologist and suggest a number of key areas of future work that will hopefully be of interest to those working in the field of educational technology research.

CHAPTER 2 | Literature Review

2.1. Introduction

This study aims to explore the lived experiences of academics with regard to educational technology, generating an understanding of its effects on their practice, exploring their beliefs as they relate to technology, and interrogating their understanding of how technology's use and non-use affects their educational setting. It aims to move beyond a simple instrumentalist consideration of what academics 'do' with technology by giving consideration to the sociocultural nature of educational technology practice. In doing so, it seeks insight into the potential influences of economic, political, cultural, and institutional forces that may shape academics' educational technology experiences.

Considering these aims, this chapter begins with an introduction to the field of educational technology, highlighting the contested nature of a multidisciplinary field of research that adopts a broadly positivist stance towards technology use. This is followed by a summation of a number of key critical perspectives that seek to confront the unchallenged orthodoxies of technology. Following this, the chapter moves towards a discussion on technological determinism, a thesis whose logic and language are used to frame technology as an inevitable and self-determining modernising force in higher education. The influence of technological deterministic thinking is then highlighted through a brief account of Irish educational technology policy, which appears to be shaped through the power relations of a hierarchical policy actor framework originating in trans-national bodies such as the OECD and the European Commission. It is the genesis of these policies that then prompts a discussion of educational technology and neoliberalism, paying heed to the role of technology within academic capitalism, new managerialism, and globalisation. The chapter then shifts to a consideration of academic practice, academic identity, and academic beliefs as they relate to educational technology use.

2.2. Educational Technology – Definitions and Terminology

> *In the film Groundhog Day, the protagonist is forced to experience the events of a single day over and over again. He is free to act in any way he chooses, but whatever he does the day always finishes in the same way. […] People who have been involved over any length of time with educational technology will recognize this experience, which seems characterized by a cyclical failure to learn from the past. We are frequently excited by the promise of a revolution in education, through the implementation of technology. We have the technology today, and tomorrow we confidently expect to see the widespread effects of its implementation. Yet, curiously, tomorrow never comes.*
>
> (Mayes, 1995, p.21).

Those working within the field of educational technology will be familiar with a broad and ever-changing lexicon of terms associated with the use of technology in education. Some of the more commonly used terms include *computer-assisted learning, e-learning, networked learning, online learning, telelearning and technology-enhanced learning* (Kirkwood, 2009, p.108). There are almost as many terms as there are technologies and the ongoing expansion of the lexis shows no signs of abating. Sarah Guri-Rozenblit conveys a sense of frustration when highlighting the ‘cacophony of jargon’ linked to the use of technology in education:

> *Internet mediated teaching, technology-enhanced learning, web-based education, online education, computer-mediated communication (CMC), telematics environments, e-learning, virtual classrooms, I-Campus, electronic communication, information and communication technologies*

(ICT), cyberspace learning environments, computer-driven interactive communication, open and distance learning (ODL), distributed learning, blended courses, electronic course materials, hybrid courses, digital education, mobile learning, distributed learning, technology enhanced learning.

(Guri-Rozenblit, 2009, p.2)

These ideologically inflected terms have been adopted to varying degrees by those with an interest in the use of technology in education. Several overarching terms exist, with their prominence in literature and policy depending on geographic location. While the term 'Technology Enhanced Learning' (TEL) has considerable traction in Europe (Kirkwood, 2014), the term 'Educational Technology' is more prevalent in a global sense (Bayne, 2015).

While many of these terms are linked with contemporary digital technologies, the utilisation of technology in education can be traced back to the early years of the 1900's, to the beginning of the of the visual instruction movement (Saettler, 2004). One might expect to see an extensive utilisation of a body of knowledge developed through our use of educational radio in the 1920's, educational broadcasting of the 1950's, and the computer-based technologies of the 1980's and 1990's. Yet, any engagement with recent educational technology literature might lead a reader to conclude that educational technology research only emerged in latter part of the 20th century. This 'collective amnesia' (Kirkwood and Price, 2005) regarding earlier technology learnings may be explained by a field of educational technology that appears trapped in a repeating cycle of hope and hype. New and emerging technologies are adopted in a vacuum of empirical evidence before the field subsequently transfers its ongoing enthusiasm to the next technologically driven development (Latchem, 2014). Our fixation on the novel application of contemporary technologies to educational settings results in a disconnect from the many valuable lessons learned from previous technological studies, particularly those garnered through the use of earlier or related versions of technology (Rushby and Surry, 2016, pp.3–5; Kirkwood, 2014). This obsession with the newness of technology contributes to an ever-expanding and shifting lexicon which proves challenging for those seeking to engage in historical and cross-study comparisons (Moore et al., 2011), further deepening our disconnect from the past.

Despite shortcomings in retrospection, recent areas of research in the field are varied (see Martín-Gutiérrez et al., 2017; Kinshuk et al., 2013; Goktas et al., 2012; Young et al., 2012) utilising a variety of different research methodologies (Reeves et al., 2017; Baydas et al., 2015) and an array of evolving technologies (Delello and McWhorter, 2020; Becnel, 2019; Martin et al., 2011). Research developments to the fore of the field in this decade include collaboration within online learning environments, mobile learning, and unsurprisingly, the development and utilisation of new educational technologies (Bond et al., 2019; Natividad et al., 2018; Hsu et al., 2013). The emergence of learning analytics has been a key development in educational technology (Ferguson, 2012), with data, once considered a by-product of educational technology platforms, now being used to "to guide learners, educators, administrators, and funders in making learning-related decisions" (Siemens et al., 2011). Higher Education which has traditionally been inefficient in its use of data (Siemens and Long, 2011), has over time, realised the value of data for purposes such as student retention (Jayaprakash et al., 2014; de Freitas et al., 2015), evaluating social learning (Shum and Ferguson, 2012; De Laat and Prinsen, 2014), guiding personalised learning (Pardo et al., 2019; Drachsler et al., 2015), providing dashboards (Verbert et al., 2013; Duval, 2011), informing pedagogical action (Lockyer et al., 2013; Bienkowski et al., 2012), and reducing operational costs (Sclater et al., 2016; Klašnja-Milićević et al., 2017).

Much work in the field of educational technology is applied in nature, resulting in multiple knowledge bases and shifts in thinking, contributing to the challenge of creating a meaningful lexicon and acceptable definition for the field. A definition does not create or legitimise a field but it may, 'help to explain its purposes, functions and roles to those within and those outside the field' (Reiser and Ely, 1997, p.63). Sian Bayne highlights the importance of the language we use to define a field:

> *The language we use to define a field is always performative – it brings it into focus and into being in a particular way, and this focus of and mode of being is always ideologically-inflected.*
>
> *(Bayne, 2015, p.7)*

It is problematic for the researcher to locate a universally accepted definition for the field of educational technology (Arkorful and Abaidoo, 2015). A myriad of definitions have come and gone with the passage of time (Seels and Richey, 2012), reflecting an altering language and the continually shifting of interest towards contemporary technologies. Luppicini (2005) offers a useful definition that describes educational technology both in the context of learning and as a change agent within education:

> *A goal oriented, problem-solving systems approach utilizing tools, techniques, theories, and methods from multiple knowledge domains, to: (1) design, develop, and evaluate, human and mechanical resources efficiently and effectively in order to facilitate and leverage all aspects of learning, and (2) guide change agency and transformation of educational systems and practices in order to contribute to influencing change in society.*
>
> (Luppicini, 2005, p.108)

Adopting a definition for an applied and evolving field is somewhat problematic as the use of the term 'definition' suggests a degree of finality and permanence. The lack of finality is illustrated in the varying definitions of the Association for Educational Communications and Technology (AECT), which has previously published evolving definitions in 1963, 1970, 1972, 1977, and 1994. In 2008, the association published the current definition, which provides us with a useful way to conceptualise educational technology:

> *Educational technology the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources.*
>
> (AECT 2008, cited in Januszewski and Molenda, 2013, p. 1)

This definition's initial emphasis on educational technology as a *study and ethical practice* moves us away from an over-concentration on technology, and instead it focuses on the facilitation of learning using appropriate technological resources (Hlynka and Jacobsen, 2009). The definition offers a utilitarian approach to technology in opposition to the centrality of technology within the learning and educational process.

While definitions are of value to the field of educational technology, there remains some disagreement regarding the extent to which the field is 'coherent, contained and bounded' (Czerniewicz, 2008, p.171). Discrepancies between approaches to research, the diverse theoretical multidisciplinary perspectives of the field, and shortcomings in changes to teaching practice, are symptomatic of a number of tensions within the field (Plesch et al., 2013). These tensions are perhaps a result of the varying multidisciplinary perspectives and knowledge bases arising from a diverse field of participants which Selwyn describes as 'a loose assortment of technologically minded psychologists, pedagogy experts, maths and science educators, computer scientists, systems developers, and the like' (Selwyn, 2010, p.65). Perhaps the most significant tension facing the field is situated around sites of debate that question the very efficacy of educational technology. In stepping down as the editor of the academic journal 'Educational Technology Research & Development' after 15 years of service, J. Michael

Spector commented on a lack of progress in the field of educational technology and made the following damning observation:

> *It is not clear to me that educational technologies have improved learning and instruction on a large scale for any sustained period of time; the nearly constant emergence of new technologies has only created the new problem of learning to use those technologies effectively in support learning.*
>
> (Spector, 2020).

Spector is not alone in casting a critical perspective on his field. As we shall now see, recent years have seen the emergence of a growing number of authors who demand a re-engagement with critical studies of educational technology in an effort to tackle technology's unchallenged doxa and its influence on our systems of education.

2.3.Critical Perspectives of Educational Technology

Selwyn and Facer (2014) highlight the relevance of Michael Young's early call for a sociological response to the rise of technology in education, demanding that sociologists conceptualise technology in order to make critical contributions to policy and practice:

> *…sociologists must raise questions not just about how teachers might use information technology to aid what they do, but how in using such technology teachers are part of a complex multinational division of labour with its constraints which are social and technical. Good sociological research will not produce anti-technology arguments, but will highlight ways in which we may be able to explore the social character of the technology.*
>
> (Young, 1984, p.209)

While there have been some notable contributions to critical perspectives on educational technology since that time; for examples, see Holloway (1984), Feenberg (1991; 2002), Postman (2011), much of the period following the publication of Young's call to arms has failed to yield a sustained sociological interest in technology in education (Selwyn and Facer, 2014). Research in the field continues to support the many unchallenged orthodoxies of educational technology, including enhancement (Bayne, 2015), cost (Laurillard, 2007), efficiency (Westera, 2004), flexibility (Houlden and Veletsianos, 2019), and modernisation (Veletsianos and Moe, 2017). The last decade has seen somewhat of a revival of interest in critical perspectives (Castañeda and Selwyn, 2018), with recent works offering critical perspectives of the discourses of online learning (Bayne et al., 2020), digital pedagogy (Stommel et al., 2020), the datafication of higher education (Wyatt-Smith et al., 2021; Williamson et al., 2020; Marachi and Quill, 2020; Raffaghelli et al., 2020; Slade and Prinsloo, 2013; Prinsloo, 2017; Wyatt-Smith et al., 2021), the digitisation of academic work (Fernback, 2018; Woodcock, 2018; Gourlay, 2021), and on digital education platforms (Decuypere et al., 2021; Komljenovic, 2021; Williamson, 2021a).

The adoption of a critical approach regarding the use of technology in education does not seek to diminish the value of the significant volume of scholarly works that have made respected contributions to the body of knowledge. Critical studies may be seen to complement existing works by 'allowing their contribution to be questioned and judged' (Oliver, 2011, p.374). Critical perspectives should not be seen negatively and should be recognised for their positive efforts to reveal 'contradictions, social inequalities, and dominances' (Allen-Brown and Nichols, 2004). They are broadly positive in that they seek to critique rather than criticise (Castañeda and Selwyn, 2018), recognising that our knowledge of technology in education is historical and broadly political in nature and shaped by human interest, which marks it as 'fundamentally pluralistic and incongruous, rather than unitary and monolithic' (Friesen, 2008). Efforts to challenge and destabilise the orthodoxies of educational technology may require a shift towards the stance of the critical protagonist:

> *It is time to re-think our task as practitioners and researchers in digital education, not viewing ourselves as the brokers of 'transformation', or 'harnessers' of technological power, but rather as critical protagonists in wider debates on the new forms of education, subjectivity, society and culture worked-through by contemporary technological change.*
>
> (Bayne, 2015, p.18)

In adopting a critical stance, we step away from blind enthusiasm and conceptual seductions of 'what might be', and instead move towards examinations of the actual, the 'what is' of educational technology (Holloway, 1984). Too much of what we do in educational technology research concentrates on the *how* of technology over the *why* of technology (Oliver, 2011). Selwyn suggests that we may counteract this though examinations that view technology along social scientific lines, providing researchers with a multiplicity of lenses through which to examine the actuality of educational technology use:

> *The academic study of educational technology needs to be pursued more vigorously along social scientific lines, with researchers and writers showing a keener interest in the social, political, economic, cultural and historical contexts within which educational technology use (and non-use) is located.*
>
> (Selwyn, 2010, p.66)

A critical study may refocus attention away from the affordances of technology (Clegg et al., 2003) allowing us to view technology in education as:

> *a set profoundly political processes and practices that are framed in terms of issues of power, control, conflict, and resistance*
>
> (Selwyn, 2015, p.250)

Consideration of these issues moves us away from the narratives of ‘enhancement’ which have underpinned promises of impending technologically driven transformation and revolution in education (Latchem, 2014; Laurillard, 2008a). A growing body of critical work challenges claims to enhancement (Selwyn, 2016c; Cox and Marshall, 2007; Kirkwood and Price, 2005; Zemsky and Massy, 2004), a term which is often used in an unreflective manner (Kirkwood and Price, 2005). Widespread and unreflective claims to enhancement are supported by a techno positivist field of research (Njenga and Fourie, 2010) which is guilty of engaging in “…’victory narratives’ that assume technology has a positive ‘impact’ and provide no empirical evidence for the added value of specific technologies” (Hennessy et al., 2018, p.4).

Critics of educational technology research highlight an over-emphasis on practitioner style research that frequently focuses on replicating existing teaching practices through technology (Kirkwood and Price, 2014). These studies are typically carried out by individuals or small groups of researchers working in isolation (Latchem, 2014), with large-scale longitudinal studies appearing to be the exception rather than the norm (Cox and Marshall, 2007). This category of study often appears devoid of a rationale for the innovation, other than a desire to experiment with technology and report on its possibilities for use within educational contexts (Kirkwood, 2014). Such studies frequently omit rigorous evidence of learning enhancements or learner gains that might otherwise allow for some level of transfer and generalisation (Kirkwood and Price, 2013a). Many of these works take the popular form of comparative studies which appear to suffer from the 'no significant difference' phenomenon (Burns, 2013; Reeves, 2005; Russell, 1999) whereby no real change to educational outcomes is achieved through the use of technology. Limitations in research may be in some way explained by the complexity of measuring learning gains, a task made difficult by the complexity of interacting variables involved in settings for teaching and learning (Cox, 2013; Pittard, 2004; Kennewell, 2001).

In an attempt to address some of these concerns, many studies now favour the use of affordances for describing the *potential* uses and benefits of technology (see Bower and Sturman, 2015; Wu et al., 2013; Dalgarno and Lee, 2010; Conole and Dyke, 2004). While affordances are a useful way to examine educational technology, such approaches stray into deterministic and instrumentalist ways of thinking about technology (Oliver, 2011), blinding us to issues of gender, race, social class, identity, power and inequality (Selwyn, 2012a). Focusing on cause and effect is a deterministic way of thinking and ignores the complexity of social action, 'thereby introducing a number of silences into any discussion of education and technology' (Selwyn, 2012a, p.83). Deterministic thinking and language are prevalent in a great deal of educational technology discourse and policy that supports the adoption of technology as a mechanism for progress and modernisation, endorsing the notion that using technology for teaching 'will in and of itself lead to enhanced or transformed educational practices' (Kirkwood, 2014, p.215).

2.4. Determinism and Educational Technology

Technological determinism is the often implicit assumption that "social progress is driven by technological innovation, which in turn follows an 'inevitable' course" (Smith and Marx, 1994, p.38). The development of technology is seen to occur independently of social, economic and political forces whereby technology is presented as an 'independent, self-controlling, self-determining, self-generating, self-propelling, self-perpetuating and self-expanding force' (Chandler, 1995, p.15). Technological progress is equated to social progress (Wyatt, 2008, p.168), often described by technological determinists as 'the technological imperative' (Chandler, 1995, p.21), insofar as progress is seen as unavoidable and inevitable, something which can only be slowed or resisted by actors within a social system. Feenberg (2002) describes two theses that support the deterministic assumption that technology has an autonomous logic of development that bends social systems to its imperatives:

1. *The pattern of technical progress is fixed, moving along one and the same track in all societies. Although political, cultural, and other factors may influence the pace of change, they cannot alter the general line of development that reflects the autonomous logic of discovery.*

2. *Social organization must adapt to technical progress at each stage of development according to "imperative" requirements of technology. This adaptation executes an underlying technical necessity.*

(Feenberg, 2002, pp.138–139)

The passive acceptance of the paradigm of globalisation within education further 'engenders a deterministic view' of the role of technology (Clegg et al., 2003, p.42). Faced with the always oncoming educational technology revolution, institutions and academic communities are placed on a continuum of modernisation, with those who fail to adopt technology being categorised as 'at risk of falling behind'. Technologically driven change is framed as a form of progress, yet it is the equation of technological change with progress which is perhaps the most 'misleading and dangerous' facet of technological determinism (Wyatt, 2008, p.172). Deterministic language and the arguments of 'progress' feature strongly in many policy documents. For example:

As indicated in the previous chapter, technological advancements make it possible for individuals to learn anywhere, at any time, following very flexible and individualised pathways and often for free. However, *educational institutions are not yet fully exploiting the potential benefits of new technologies as an enabler to innovate and modernise learning and teaching practices. When technology is not used in education, learners are also not developing digital competences to become confident, critical users of new technologies*

(European Commission, 2013a, p.14)

In the above statement, educational technology is framed as a catalyst of change, enabling learners to 'learn anywhere, at any time'. The socio-economic status of learners, their ability to access costly technology platforms, and their ability to access the education system seems to have been taken for granted. The EU accuses educational institutions of failing to progress along the continuum of modernity by 'not yet fully exploiting the potential benefits of new technologies as an enabler to innovate and modernise learning and teaching practices'. It is technology that will apparently bring much-needed modernisation and innovation to teaching practices. Technology is attributed with agency and the power of change, while the educator's agential role during the course of this promised revolution remains unclear.

For another example of deterministic thinking, let us examine the following excerpt from a UK department of education policy document:

E-learning has the potential to revolutionise the way we teach and how we learn. There is e-learning already around us in schools, colleges, universities, community centres, in the workplace, and in the home. It's important because people are finding that e-learning can make a significant difference: to how quickly they master a skill; how easy it is to study; and, of course, how much they enjoy learning. It is important because it can contribute to all the Government's objectives for education – to raising standards; improving quality; removing barriers to learning and participation in learning; preparing for employment; upskilling in *workplace; and ultimately, ensuring that every learner achieves their full potential.*

(Department for Education and Skills (United Kingdom), 2003, p.3)

In this single paragraph, technology is positioned as the promised solution to skill attainment, ease of study, learner satisfaction, quality assurance, access to education, employment readiness, upskilling and the development of the responsible citizen who will achieve 'their full potential'. Governments, employers, and the individualised learner are marked as key beneficiaries, while the advantages to academia may come in the form of improved standards and quality.

While the thesis of technological determinism has been widely critiqued and to some extent discredited within sociology, the perspectives and language of determinism appear to be prevalent in a great deal of learning technology policy, research and discourse (Selwyn, 2012a; Oliver, 2011; Bennett and Maton, 2010; Friesen, 2009; Clegg et al., 2003). Is this perhaps a sign that technologists are inherently deterministic in their outlooks (Surry and Farquhar, 1997), or perhaps it is the 'common sense' language of determinism, offering a 'billiard ball model' of change (Chandler, 1995) which is attractive to many? In critiquing the limitations of determinism, Oliver (2011) points us towards Activity Theory (Engeström, 1999; Vygotskiĭ, 1978), Communities of Practice (Wenger et al., 1999), Actor-network theory (Callon, 1987), and the Social Construction Of Technology (SCOT) (Bijker et al., 1987), as useful approaches in the examination of the interplay between technology and social practice. These perspectives allow us to pay heed to the socially situated and culturally mediated nature of technology, moving beyond the determinist outlook of inevitable progress, instead encouraging us to seek out the possibility of alternative pathways of technology.

Andrew Feenberg (2002) offers up a *Critical Theory of Technology*, in which he equates technology to political design in being fundamentally biased toward a particular hegemony:

> *Modern technology as we know it is no more neutral than medieval cathedrals or the Great Wall of China; it embodies the values of a particular industrial civilization and especially those of elites that rest their claims to hegemony on technical mastery. We must articulate and judge these values in a cultural critique of technology. By so doing, we can begin to grasp the outlines of another possible industrial civilization based on other values. This project requires a different sort of thinking from the dominant technological rationality, a critical rationality capable of reflecting on the larger context of technology.*
>
> (Feenberg, 2002, p.6)

While advocating for a bottom-up approach to technological democracy, Feenberg offers hope in the form of critical theory's recognition of the human actor's ability to be reflexive, to challenge, to resist, and in doing so, to influence the future design of technology from the bottom up. "*What depends on a social force can be changed by another social force: technology is not destiny*" (Feenberg, 2002, p.64). Feenberg frames technology as a site of social struggle in which the majority are undemocratically excluded from the design process. While this may be true of many commercially developed educational technology platforms, it does fail to account for socially developed technologies. Many educational technologies have arisen from open source or collaborative projects whose goals are primarily emancipatory and altruistic. I do not subscribe to the view that *all* technologies are deliberately designed by elites or all have embedded ideologies which are counter to the interests of the society which uses them. However, Feenberg does suggest the need for a '*cultural critique of technology*', which may be useful in considering how socially shaped educational technologies may be utilised for unintended purposes.

Despite the many critiques of determinist ways of thinking, we see its language replicated in educational technology discourse and across the value-laden pages of educational policies which promise a wide range of benefits to higher education:

> *Technological determinism is found frequently in the utopian pronouncements made by enthusiasts concerning the significant benefits that technology has the potential to bring about (e.g. lower costs per student, greater flexibility, wider participation, improved student learning and outcomes).*
>
> (Kirkwood, 2014, p.208)

These deterministic proclamations need to be understood within the broader context of a policy actor-network which adopts deterministic logic in defence of a neoliberal ideology that seeks to invoke a transformation of higher education through technology. This form of deterministic thinking is supported through hierarchical power relations of policy actors who disseminate a relatively homogenous vision for higher education's inevitable technological transformation. With this in mind, the next section will now offer an overview of key policies which aim to bring about technological driven change to higher education in Ireland.

2.5. Educational Technology Policy – An Irish Perspective

At the turn of the century, educational technology policy gained greater attention at national and transnational levels in response to the demands of a globalising economy (Salajan and Roumell, 2016). As ICT increasingly became a driver for state economic prosperity and competitiveness, discourses supporting the imperatives for economic and social development were used to promote the utilisation of technology within education (Kozma, 2005). Greater levels of state interest have contributed to the shaping of educational technology as an intensely political field (Orlando, 2014) whose policies are now influenced by a diverse array of policy actors and stakeholders (Williamson, 2019). Policy networks now include technology vendors, government agencies, transnational corporations, foundations, philanthropists, think-tanks, media companies and for-profit education providers (Williamson, 2019b; Player-Koro et al., 2018). State policies have a strong influence over educational technology (Mao et al., 2019; Czerniewicz and Rother, 2018; Rizvi and Lingard, 2010) and contain political intent concerning discourses of workforce upskilling, modernisation of education systems, and the technological enhancement of the lives of citizens (McGarr and Johnston, 2019; Austin and Hunter, 2013; Selwyn, 2011; Kozma, 2005; Kozma, 2008). Selwyn suggests that political intent is visible within the pages of ideologically laden educational technology policy that supports a wider range of non-educational agendas:

> *The discursive role of policy refers to the meanings, intentions, values and beliefs that lie behind these formalised expressions of state intent. State policies can therefore be seen as symbolic systems of values, acting as a means of representing, accounting for and legitimating particular political decisions.*
>
> (Selwyn, 2012b, p.71)

The international technology policy landscape is thematically and ideologically homogeneous (McGarr and Johnston, 2019; Erichsen and Salajan, 2014), driven by an ongoing culture of innovation-related policy emulation amongst industrialised nations (Mowery, 2011). For example, the European Union and the United States' educational technology policies are remarkably similar as each engages in reciprocal policy development response patterns in light of the shifting competition of the global environment (Erichsen and Salajan, 2014). Increased political focus results in technology policy exerting a greater influence on wider education policy as technology moves in from the margins to occupy a strategically mission-critical position within our institutions (Conole, 2002). In a similar manner to educational technology research, policy texts appear dominated by 'technopositivist' perspectives, a form of 'compulsory enthusiasm' for educational technology (Njenga and Fourie, 2010, p.200). This 'techno-logic' (Feenberg, 2002, p.139) supports the approach of policymakers who aim to affect tangible technology-driven change in higher education (de Freitas and Oliver, 2005).

In his analysis of the development of higher education in Ireland from 1922 – 2016, John Walsh notes the sudden repositioning of Irish Higher education in the late 1990's:

> *A new phase in the transformation of the Irish higher education system emerged from the late 1990s, characterised by sustained national and international pressures on HEIs to prioritise economic objectives; more fine-grained intervention by state agencies at institutional and programme levels; more intensive commercialisation and a decline in public resourcing of HE. Enhancing human capital emerged as a key priority not only to achieve upskilling of the work force but to promote research and development (R&D) underpinning high-value industrial enterprises… Following the economic crash in 2007–08, the primacy of knowledge based economic imperatives sidelined all other considerations in an era of renewed austerity which continued well into the following decade.*
>
> (Walsh, 2018, p.387)

Policies that have been written with the intention of affecting change within the Irish education system have their genesis in the ideologies of transnational bodies such as the Organisation for Economic Co-operation & Development (OECD) and European Union (EU). The OECD has been particularly influential in the shaping of international educational policy discourse (Niemann and Martens, 2018; Sellar and Lingard, 2014; Grek, 2009), and since the 1980's it has increased its calls for the utilisation of technology in education (Istance and

Kools, 2013). As far back as 2005, the OECD recommended changes to Irish state policy, stating that 'e-learning could be well placed to transform tertiary education for better in the long run' (OECD, 2005, p.19). In its 2006 review of Higher Education policy in Ireland, the OECD noted the potential for educational technology and online distance learning, predicting that it 'will become a more significant part of higher education provision in Ireland' (OECD, 2006, p.210). A decade later, its 2016 report acknowledged the potential of educational technology while reflecting on 'shallow' levels of adoption, noting that education 'has not managed to harness technology to raise productivity, improve efficiency, increase quality and foster equity in the way other public sectors have' (OECD, 2016, p.31). The 2016 commentary frames the education sector as the technology luddite of the Irish public service. It warns of the dangers of the impending 'digital divide', a potential skills gap between the haves and have-nots in relation to digital technologies. Hence the suggestion is made that educational systems which do not leverage technology place their students at a disadvantage, one which may affect 'employment, income and other social outcomes' (OECD, 2016, p.9).

The European Commission adopted a similar stance to the OECD and has been active in the publication of policies that promote a more cohesive drive towards educational technology adoption in its member states' educational systems (Salajan and Roumell, 2016, p.391). Like the OECD, the EU's interest in educational technology is driven by the identification of ICT as a critical component in economic and social systems across member states. The Commission's 2013 report on the modernisation of higher education frames technology as a driver for revolutionary developments with the potential for 'seismic impact' on the higher education landscape. Technology and online learning are positioned as 'a challenge to our entire model of higher education' (European Commission, 2013b, p.48). The Commission's 2014 report into new modes of learning and teaching in higher education recommends that 'the integration of digital technologies and pedagogies should form an integral element of higher education institutions strategies for teaching and learning' (European Commission, 2014, p.30). The Commission echoes the OECD's concerns in emphasising the apparent failure of the education sector to adopt technology. It points a finger of blame towards fragmented national policy initiatives, which may result in 'negative impacts in terms of social cohesion, competitiveness and efficiency of resources', as well as a loss of competitiveness in comparison to non-EU territories such as the US and Asia (European Commission, 2013a, p.46). The 2018 EU Digital Action Plan points to a lack of transformation, and states 'digital technology has huge, largely untapped potential for improving education' (European Commission, 2018, p.5).

It is worth noting at this point that while the policies of the OECD and the European Union emphasise the transformative and modernising effects of technology, little by way of empirical evidence is provided in support of these claims. Indeed, robust evidence of impact is 'at a premium' in policy development circles (Latchem, 2014, p.181). Thus we see a series of seemingly unsubstantiated claims passed down through a hierarchical policy network that sees policies reworked, rewritten and reconstituted at every level of the education system (Williamson, 2019b; Player-Koro et al., 2018).

It should be noted that Irish education is notable for its lack of specific policies on technology, and instead, we see policy spread somewhat like confetti across broader educational policy documents. Many of these policies and embedded technology discourses are filtered and refined through a network of state and semi-state bodies prior to their replication on the pages of institutional technology strategies. As an example, Ireland's Higher Education Authority (HEA), a link between the Irish Government and Ireland's higher education institutions, adopts similar outlooks to the OECD and EU in emphasising benefits of reduced costs, benefits to academics and enhanced supports to students (Higher Education Authority, 2009). The HEA frames educational technology as an influencing force on institutional ranking, access to education, academic productivity, changing institutional cultures and missions, funding, competitiveness, and opportunities in a global marketplace. The HEA suggests that technology has the potential to increase inclusion in higher education (Higher Education Authority, 2012), and in its 2018-2022 strategic plan, it states that technology 'will be crucial to what, how and where students learn.' (Higher Education Authority, 2018, p.5).

State generated policy also makes direct reference to the importance of technology in our education sector. The National Strategy for Higher Education to 2030 (Department of Education and Skills, 2011), commonly known as 'the Hunt Report' (Walsh, 2018, p.440), was produced at the height of Ireland's recent economic crisis and represented an attempt by the Irish government to restructure Irish higher education and re-orientate it 'to serve broadly utilitarian objectives' (Walsh and Loxley, 2015, p.1128). The report highlights technology as a component of an 'excellent teaching and learning experience' and links technology to the provision of flexible learning against a backdrop of a human capital/skills agenda. Most recently, the report of the Expert Group on future funding for Higher Education (Department of Education and Skills, 2016), a report commonly known as 'the Cassells Report', links the provision of education to the strategic and economic needs of the market (Darby et al., 2017). In doing so, it highlights the importance of technology when suggesting that 'technology has a critical role to play in the future of higher education' (Department of Education and Skills, 2016, p.11).

Another key influencing source of policy in Ireland is the National Forum for the Enhancement of Teaching and Learning in Higher Education (National Forum). In 2015, the National Forum published its vision for digital capacity building in higher education (National Forum, 2015) which calls for the development of strategic capacity in institutional and national policy, and the integration of technology enhanced learning (TEL) into quality frameworks. The key vision statements of the report describe technology as: a mechanism for transformative goals as articulated in the National Strategy for Higher Education; a mechanism for modernisation; a mechanism for enhancing teaching and learning; a solution to issues of capacity and access; a mechanism for the provision of digital skills required by graduates; and a mechanism for institutional collaboration and internationalisation. These discourses are repeated in many of the strategic and operational plans of Irish higher education institutions (e.g. Maynooth University, 2018; Waterford Institute of Technology, 2018; Dublin City University, 2017; National University of Ireland Galway, 2015), which place a common emphasis on the strategic importance of technology, perhaps seeking the long promised 'technological fix' (Robins and Webster, Frank, 1989, pp.11–33) which we see repeatedly highlighted in national and international policy.

Mounting state efforts to exert increased control over educational technology have provoked a greater level of critical scrutiny of policy networks, policy actors, and the underlying ideologies contained within policy texts. Is it possible that the educational technologies that academics adopt in light of prevailing claims of enhancement and betterment serve broader neoliberal agendas? A growing body of critical work links educational technology policy to neoliberalism and its association with free-market behaviours and globalisation. Understanding the extent of the academy's awareness of these masked political intents may offer some explanation for the apparent policy practice gap and the purported unhurried rate of technological transformation within our universities.

2.6. Educational Technology and Neoliberalism

> *"Universities have entered the marketplace, and as a consequence, the marketplace has entered the soul of the university"*
>
> (Robins and Webster, 2002, p.12)

Neoliberalism is, first and foremost, a theory of political economic practice that characterises strong property rights, free markets and free trade for the benefit of human well-being (Harvey, 2007). Neoliberalism has evolved into a 'common sense' way of thinking about our way of life in the 21st century despite criticisms which label it as a dangerous ideology (Giroux, 2004) and a factor in increased social and economic inequality, increased deprivation, damage to our global environment, and the destabilising of economic systems (Chomsky, 1999).

As Larner (2003) reminds us, neoliberalism may have a clear intellectual genesis, but it arrives in differing places in different ways and forms, often resulting in unexpected outcomes. One such unexpected outcome can be observed in changes to the identity and cultures of our higher education institutions (Olssen and Peters, 2005) which have been transformed into powerful consumer-oriented networks whose public service values have been compromised as education is recast as a market commodity (Lynch, 2015; Ball, 2012). Discourses of privatisation, marketisation, performativity and the 'enterprising individual' (Ball, 2012; Apple, 2001) have reduced higher education to an input-output system that responds to the needs of the market rather than those of the common good (Lynch, 2015; Saunders, 2010; Shore, 2010; Levidow, 2002). The transition to the 'knowledge economy' has resulted in the emergence of 'knowledge capitalism', which is particularly responsible for the redefinition of the relationship between higher education and the market (Olssen and Peters, 2005). The commodification of knowledge has led institutions to undergo cultural, systematic and structural changes (Gumport, 2000), which are referred to using overlapping terms such as 'academic capitalism', 'academic entrepreneurism' and 'new managerialism' (Deem, 2001). Academic capitalism refers to higher education institutes' involvement in market-like behaviours, particularly through the commodification of knowledge and generation of revenue through associated activities (Rhoades and Slaughter, 2004). The emergence of the 'corporate university' (Allen, 2007) is a response to the rise of the 'entrepreneurial society' (Audretsch, 2014: 313-321), which sees the academy adopt an entrepreneurial approach to the curriculum and to their activities in a push for revenue, seeking to maximise income from teaching, research and knowledge production (Slaughter and Leslie, 1997).

New managerialism (Hood, 1991) is at the heart of neoliberal institutional change and is frequently associated with a number of adverse effects, including: the replacement of the public-sector ethic in favour of contractualist norms and rules (Olssen and Peters, 2005); an over-emphasis on competition and ranking (Lynch, 2015; Jöns and Hoyler, 2013); changing roles and increases in the numbers of academics in precarious employment (Courtois and O'Keefe, 2015; Archer, 2008); issues of gender bias and carelessness (Morley, 2016; Lynch et al., 2012); limiting academic autonomy in teaching and research (Olssen and Peters, 2005), and the maintaining of relationships of power and domination over the academy (Lorenz, 2012; Deem and Brehony, 2005; Shore and Wright, 1999). The new managerialist is likely to be attracted to the benefits of educational technology, which 'contribute to the reduction or containment of costs, increasing student numbers, competitive advantage, or meeting student expectations' (Kirkwood and Price, 2014, p.8).

Educational technology plays an important role in defence of the neoliberal ideology (Feenberg, 2017) and in particular, its ability to allow educational institutions to continue to focus on the marketplace of education and the reframing of the student as a consumer:

> *Indeed, digital technologies are commonly used to support the expansion of university education into domestic, community and work settings. The idea of being able to engage with university work on a continuous 24/7 basis reframes the idea of 'the student' around a neoliberal ideal of the entrepreneurial consumer engaging with education on a flexible and self-motivated basis. While often promoted as making access to higher education freer and more open, such forms of digital education clearly*

support ideas of higher education as a product that is consumed along economically rational lines.

(Castañeda and Selwyn, 2018, p.7)

The reconstitution of education as a commodity moves us to a 'language of learning' (Biesta, 2004), whereby education is packaged and consumed within a new vocabulary of technologisation or instrumentalisation (Friesen, 2013, p.29). The consumer student interacts with an education system whose utilisation of technology is perceived as a sign of progress and modernity (Clegg et al., 2003) within a competitive marketplace for learners. As universities move away from 'bricks and mortar' towards 'clicks and mortar' (Selwyn, 2007), we see a range of educational practices and process reshaped by technologies which have often been designed with other markets in mind (Jones, 2019; Castañeda and Selwyn, 2018; Holloway, 1984). For example, take the COVID-19 pandemic of 2020, in which entire education systems were forced online through rapid government policy shifts (Zhang et al., 2020; Bozkurt et al., 2020). During this emergency, face-to-face teaching was quickly transitioned into online educational experiences (Gourlay, 2021), which were contorted around the product features of platforms such as Zoom and Microsoft Teams. While few would question the motivations behind a desire to do the best for our students, the rapid transformation of global education systems was based on the question of 'how' rather than the question of 'why' and faced little early opposition in terms of critical debate around the merits and ethics of our new technology enabled approaches.

In recent years, the links between educational technology and neoliberalism have received greater levels of critical attention. Bayne et al. (2020) note the entanglement of 'discourses of the digital' with neoliberal discourse as part of wider instrumentalist perspectives on technology and the ongoing corporatisation of education. Technology is linked to the enhancement of the education process (Bayne, 2015), graduate work readiness (King and Boyatt, 2015) and the enablement of wider political goals (Hamilton and Friesen, 2013).

Munro (2016; 2018) concludes that the United Kingdom state policies regarding educational technology have been complicit in the neoliberal erosion of UK higher education. Munro's analysis of a decade of policy and strategy document texts highlighted neoliberal narratives of *Instrumentality*: the idea that the education system is a utilitarian entity linked to the state's economic welfare; *Modernisation*: the process of change and reformation in within higher education as enabled by technology; and *Marketisation:* the application of market policy to higher education. Hayes (2015) discourse analysis of UK texts highlights similar economically led motivations within the pages of state policy and institutional strategy documents. Further afield, Thomas and Yang (2013) point to educational technology as a key driver in the privatisation and commodification of education in Thailand, highlighting its detrimental effects: a deteriorating educational experience, poor faculty morale, and the suppression of local ways of knowing.

In Ireland, educational technology policy imperatives have aligned to economic goals, contributing to a shift toward a 'neoliberal ideology consistent with the commodification, consumerisation, and commercialisation of education'. (McGarr and Johnston, 2019, p.5). National policies and strategies for flexible learning, which encourage the utilisation of educational technology, are underpinned by a human capital rationale (Flannery and McGarr, 2014) and further bind the provision of education to the needs of the economy. The ongoing digitisation of higher education is linked to the expansion of the digital economy, marked by new forms of value extraction from our public facing institutions (Komljenovic, 2020). Within our institutions, concerns are raised around the use of educational technology in the alienation of academic labour and the ongoing proletarianisation of higher education (Hall, 2018). Technology is linked to endeavours of commodification, control, marginalisation, surveillance, the generation of surplus academic labour, and the undermining of contracts and working conditions (Hall, 2013).

Smith and Jeffery (2013, p.378) conclude that technology use and acceptance in higher education is not a consequence of mere technological evolution and that technology is now 'embedded in the social, economic, and political contexts governed by neoliberal discourses and practices', and responsible for reconstituting both the role of the educator and the production of knowledge. This reconstitution should be clearly visible in the altered practices and identities of academics. Nevertheless, as we shall now see, there remains an apparent gap between policy aspirations and the realities of practice change.

2.7.A gap between policy and practice

Friesen (2009) is firm in the belief that research into educational technology must take academic practice into account, understanding how practice is affected by technology through focusing on what academics are actually *doing* with technology, recognising that technology is often used in unforeseen ways and in complex circumstances. While Friesen highlights the core activities of teaching and learning, we must be cognisant of the multifaceted nature of academic practice, paying particular attention to other elements of practice including research, scholarship, supervision, academic administration and management (Fry et al., 2009, p.3). Academic work should be considered within the political, economic and cultural context of universities (Allmer, 2018), understood as complex and changing (Clegg, 2008; Henkel, 2005), and reshaped by a higher education environment that is shifting ideologically towards marketisation, commercialisation and neoliberalism (McNaughton and Billot, 2016; Hall, 2013; Clegg, 2011; Billot, 2010). Within this altering environment, technology is positioned as an agent for change, which may challenge the embedded cultures and practices of academia (Laurillard, 2007). Yet despite significant and continued investment, research suggests that educational technology has failed to have a widespread transformative and disruptive effect on academic practice (Price and Kirkwood, 2014; Plesch et al., 2013; Conole, 2010; Blin and Munro, 2008; Selwyn, 2007; Kirkup and Kirkwood, 2005; Zemsky and Massy, 2004).

In Ireland, this apparent policy practice gap is highlighted by the National Forum for the Enhancement of Teaching and Learning, which notes:

> *technological potential is not being utilised as fully or as creatively as it could be in higher-education environments*
>
> (National Forum, 2014, p.7)

The Irish Department of Education and Skills notes that technology-enhanced online and flexible course offerings remain the exception rather than the rule (Department of Education and Skills, 2011, p.36). Within Irish higher education institutions, the gap between aspiration and reality has been articulated by senior management who have expressed concern regarding insufficient levels of technology usage; cost and sustainability; the expectations of the 'digital student'; scalability and staffing; and students 'digital competence' (National Forum, 2015, p.16). A radical sector-wide transformation seems far from underway, with current initiatives described as 'fragmented, piecemeal and often unsustainable' (National Forum, 2015, p.iii). While the importance of connecting policy to practice is recognised (Conole, 2010), a tension exists between those who devise policy and those who are expected to adjust their academic practice to facilitate promised transformation:

> "*Evidence of inconsistent, inefficient or informal practices surrounding the digital dimension of teaching and learning suggested a need to ensure that policies are rooted in consultation with the staff who will implement them in practice*"
>
> (National Forum, 2018, p.7)

Perhaps these discourses of failed transformation are overstated due to the hyperbole surrounding educational technology, where anything less than the promised radical transformation of teaching practice seems disappointing

(Kirkup and Kirkwood, 2005). While discourse supports a notion of failed transformation, there is significant evidence to suggest that technology is complimenting existing practices rather than altering them (Blin and Munro, 2008; Kirkup and Kirkwood, 2005). Nonetheless, it should be noted that there exists a deficit in our understanding of the actuality of technology use in academic practice, that is, what academics *do* with technology and how they do it (Hannon, 2013). Research into wider academic perceptions of educational technology and its impact on academic roles and identities has been neglected, with the academic voice often represented by enthusiasts and early adopters (Hanson, 2009). While vast swathes of research concentrate on the affordances of technologies and the experiences of the 'digital native' student (Prensky, 2001), scant attention has been paid to the academic staff responsible for implementing this impending digital transformation (Gregory and Lodge, 2015).

Barriers to implementation are often highlighted as explanations for the non-transformation of practice. The 2018 Survey of Technology Enhanced Learning for Higher Education in the UK (Walker et al., 2018) has engaged in a longitudinal analysis of academic educational technology use spanning the timeframe 2003 – 2018. In that period, the most commonly cited barriers to educational technology adoption were 1: lack of time; 2: departmental/school culture; 3: lack of academic staff knowledge. Similar impediments to adoption are commonly cited in the literature. Lack of time includes both time to commit to the innovation in terms of training and development (Gregory and Lodge, 2015; Donnelly and O'Rourke, 2007) and the time associated with the increased workload of technology utilisation (Loughlin, 2017; King and Boyatt, 2015; Sappey and Relf, 2010; Al-Senaidi et al., 2009). The utilisation of technology requires time for the development, implementation, evaluation, and review of technology linked initiatives, which is seldom accounted for in workload models (Gregory and Lodge, 2015; King and Boyatt, 2015). The strategic goal of reduced labour costs though investment in technology frequently fails to account for the hidden costs of additional workload and the resulting resistance to technology brought about by increased time pressure and impacts on work/life balance (Sappey and Relf, 2010). The management of workload and the freeing up of time is seen as a critical enabler in technology adoption (Kirkwood and Price, 2014; Laurillard et al., 2009).

The culture of the surrounding department / school is also a key factor in the development of practice (Walker et al., 2018; Ertmer and Ottenbreit-Leftwich, 2010). School and department management have a key role to play in the addressing of cultural issues which impinge on technology (Ertmer and Ottenbreit-Leftwich, 2010). The connection of top-down strategic thinking and bottom up adoption initiatives (King and Boyatt, 2015; Brown, 2013) must include inputs from both management and the academy. This is particularly important where academic staff perceive themselves to be excluded from decision making relating to the use of educational technology within their institutions (Singh and Hardaker, 2017; de Freitas and Oliver, 2005). There is also a need to move management away from laying blame on those who have failed to utilise technology. There is a tendency in management discourses to concentrate on 'discourses of deficiency' (Selwyn, 2007) and to attribute failures to 'an oversimplification of negative attributes' (Hanson, 2009, p.557). Management might instead seize an opportunity to engage with macro-level barriers to adoption, considering:

> *the complex mix of pedagogical, technological, economic and cultural challenges in the adoption of eLearning innovations with a holistic approach, which takes into account more than just one-dimensional change processes*
>
> (Schneckenberg, 2009, p.421).

Management also has a key role in developing a culture of technology that might provide logical imperatives and benefits to academics seeking to adopt technology. The advantages to the academic and the educational environment must be a primary driving factor in technology adoption, and yet we note new managerialisms fixation on the *solutions* afforded to management through technology use (Selwyn, 2007), particularly those which afford the reduction of labour costs and other efficiencies (Price and Kirkwood, 2014). New managerialism has benefitted from technology which, rather than making the campus more virtual, has instead made our institution's processes and functions ‘more visible and concrete’ (Clegg, 2008, p.46). A series of actors within the higher education environment have now utilised technology to ‘audit, to concretise, standardise, and regulate processes which are more easily accomplished though the operation of the virtual’ (Clegg, 2011). Conversely, as educational technologies are put in place, underlying successful pedagogic practices tend to ‘become invisible’ (Price and Oliver, 2007, p.24). While pedagogy may be pushed to the sidelines, other practices and forms of work undergo a process of ‘exteriorisation’ through technology which renders academic practices visible and calculable, making practices more amenable to the direction of management and institutions (Land, 2006). These effects provide little in terms of motivation for the academic uptake of technology.

Holistic approaches to the adoption of educational technology need to consider the efficacy of academic staff with regard to the use of technology (Walker et al., 2018; John, 2015; Ertmer and Ottenbreit-Leftwich, 2010). Support for the development of proficiency in technology use is an important factor in technology adoption (Price and Kirkwood, 2014; Laurillard et al., 2009). The provision of time for engagement and a recognition that academics have differing proficiency levels and, therefore, differing support needs is also an important consideration (Gregory and Lodge, 2015). This can be difficult given the relatively low value attached to academic development in the face of more visible commitments such as teaching and research (Smith and Oliver, 2000). While management must consider ways to allow for engagement with formal continuous professional development (CPD) initiatives, there must also be a recognition of the many informal forms of CPD, including collegiate knowledge sharing, mentoring, peer review, communities of practice, student feedback, workshops, conferences, and portfolio development (Kukulska-Hulme, 2012; Brooks, 2010; Schneckenberg, 2010; King, 2004). Improvements in self-efficacy (Bandura, 1977) is important as academics who have high levels of self-efficacy with respect to educational technology are more likely to integrate technology into their practice (Buchanan et al., 2013; Georgina and Olson, 2008).

It should also be recognised that any effort to remove identified barriers may not in itself provide a resolution to non-adoption. Much of the literature around barriers to adoption offers overly simplistic remedies (e.g. Ely, 1990) and negate consideration of identity, cultures, values, and beliefs which might contribute to technology resistance. Academics are often painted as helpless bystanders who require simple systematic interventions and 'prods' to free them from the shackles of outdated practice. Significant numbers of faculty resist technology initiatives (Watty et al., 2016) which may be due to uncertainty regarding technology's impact on academic practice (de Freitas and Oliver, 2005, p.93). Resistance may also be a sign of pushback against imposed change (Loughlin, 2017) which seeks to alter the teaching setting and create pressure on academic roles and practices (McNaughton and Billot, 2016). Academics may also recognise technology as a tool of domination and colonisation, representing an ideology that is incompatible with their own identity and beliefs. The links between globalisation, neoliberalism and marketisation have already been outlined in this chapter. Clegg (2003) highlights academics' awareness of the links between these ideologies and technology and the resulting forms of resistance that may arise in response to threats to working practices or managerial led attempts to control the curriculum and technology itself. Technology needs to be understood as a change to the higher education environment and therefore a potential catalyst for struggle and tension (Whitworth, 2005).

2.8. Educational Technology as a catalyst for change

One might assume that academic practice remains mostly untouched by technology, and yet the influence of technology on academic life appears significant, whereby avoiding any level of digitisation of practice seems improbable (Hildebrandt and Couros, 2016). As the missions of higher education institutions become 'indivisible from the ideology of the information society' (Fernback, 2018, p.144), we see a greater dependence on the use of technology for academic work. Recent years have seen the emergence of digital scholarship (Weller, 2011; Pearce et al., 2010; Greenhow et al., 2009; Borgman, 2007) impacting upon all of Boyers four dimensions of scholarship (Boyer, 1990). Digital technologies may impact on 1: the *discovery* of new knowledge and the publication of open data; 2: the *integration* of new knowledge across existing or new disciplines; 3: the *application* and dissemination of scholarly work to the wider world and 4: *teaching* activity (Weller, 2011; Pearce et al., 2010). The primary priorities of scholarship remain somewhat unchanged but are now influenced by an array of new technological affordances:

> *The priorities of scholars whether conventional or digital are still similar. They research, debate and communicate. However, with the new affordances of digital technologies, the way scholars negotiate and navigate information and communicate is changing, and that is mediated by technology.*
>
> (Scanlon, 2018, p.1)

Where scholarship was previously confined to the silo of the discipline and the institution, we may now see academics engaged on multiple social media platforms (Veletsianos and Moe, 2017; Knight and Kaye, 2016), working within open education movements (Weller et al., 2018; Scanlon, 2014), and disseminating knowledge through open access publishing platforms (Tennant et al., 2016). As a result, academics no longer work in a 'bounded space' (Henkel, 2005) as defined by the structures within institutions. Instead, they may find their practices changed and 'renovated' through new technologies and new distributed knowledge networks (Costa, 2015a) which transform approaches to knowledge creation, teaching, and administration (Woodcock, 2018).

Advocates for technology use in higher education suggest that technology offers academics the potential to transform the approaches taken to teaching and learning (Laurillard, 2008b; Conole and Dyke, 2004; Resnick, 2002). And yet too often, transformation has been replaced by a process of 'domestication' resulting from a tendency of the higher educational system to focus on the preservation of itself and its practices through the 'bolting on' of new technologies to existing practices (Salomon, 2002). In the processes of technology adoption, considerations of technology appear to take precedent over considerations of pedagogy and matters of learning (Castañeda and Selwyn, 2018; Koehler et al., 2007) in part due to a misplaced belief that technology will in itself promote rapid change within teaching practice:

> *ICT is often perceived as a catalyst for change, change in teaching style, change in learning approaches, and change in access to information. Yet the rhetoric for change has been too associated with the symbolic function of technology in society...*
>
> (Watson, 2001, p.251)

All too often, the adoption and subsequent use of technology is reliant on educators existing conceptions of teaching (Englund et al., 2017; Kirkwood and Price, 2013b). Thus we may see a 'spectrum of adoption' in which educators may *concede* aspects of their existing pedagogy, leverage technology to *enhance* it or *resist* it entirely (Westberry et al., 2015). Westberry *et al*. advocate for a process of technology adoption which in the first instance, is aligned with the educator's conceptions of teaching, allowing for subsequent support and time to reflect on the emergent dialogue between pedagogy and technology:

> *it is imperative for technological changes to be introduced either in a way that is aligned with teachers' current knowledge and ways of working, or with the support and time needed to effectively resituate them.*
>
> (Westberry et al., 2015, p.114)

Ertmer (2005) highlights the gradual nature of practice change and the need to recognise the variety of experiences and influences which may be drawn upon in the gradual process of resituating practice. Ertmer highlights the importance of considering the influence of the surrounding *socio-cultural space,* the role of *vicarious experiences* whereby we may have learned about technology practice through others, and educators' *personal experiences* of technology which may shape new forms of practice over time. Experiential learning is important as the mere act of using technology may in itself, prompt individuals to reflect on their long-standing approaches to teaching:

> *integration of technology within classroom educational processes has the potential to change teachers' beliefs towards more student-centered, constructivist beliefs. Technology is viewed as a way to motivate teachers to experiment, implement, and refine new approaches to teaching and learning.*
>
> (Tondeur et al., 2017, pp.568–569)

Changes to practices may also arise through 'critical unmet expectations' (Scott, 2016), whereby failure or tension may prompt an examination of one's approach to technology. This may occur following negative experiences or feedback from students, which points to a necessity for change.

In considering practice change, academics may learn about technology through formal, informal and independent learning opportunities (Rienties and Hosein, 2015; Roxå and Mårtensson, 2015; Jones and Dexter, 2014; Rienties, Brouwer and Lygo-Baker, 2013). Within formal contexts, academic development has emerged as an important field of practice in higher education (Clegg, 2009), with academic developers and educational technologists taking a prominent role in formal staff development (Shurville et al., 2009; Shephard, 2004). Outside of formal development opportunities, academics may develop technology practice through peer learning (Boud, 1999) and learning from others in the workplace (Eraut, 2007; Boud and Middleton, 2003). Ultimately, change in educational practice is dependent on 'what teachers do and think' (Fullan, 2007, p.129), and there can be little doubt that technology forces the educator to do something differently. Change resulting from integrating technology into teaching may be slow and gradual (Englund et al., 2017; Kirkup and Kirkwood, 2005; Nespor, 1987), complex and personal (Orlando, 2014). Technology adoption might best be understood in terms of a transition, something that can used in ways that are consistent with educators practices and in ways that may eventually alter their practices (Matzen and Edmunds, 2007).

To gain a greater insight into possible changes to practice, we need to have a clearer understanding of academic identity and beliefs as they relate to educational technology. This is important as technology is acknowledged as a potentially destabilising force on both academic identity and belief systems. The emergence of technology in higher education has not only the ability to transform our sense of academic identity and how we communicate that identity but also the potential to challenge our existing beliefs around an array of topics such as pedagogy, scholarship, knowledge production, and the role of contemporary academia itself.

2.9. Educational Technology and Academic Identity

Academic identity can be understood as a set of stories about the individual, signifying the dynamic interplay over time of personal narratives, values and processes of identification (McCune, 2019, p.3). Academic identity is understood 'not as a fixed property, but as part of the lived complexity of a person's project' (Clegg, 2008, p.329), which is rebuilt, reshaped and renegotiated in social interaction (Laiho et al., 2020; Ylijoki and Ursin, 2013). While academic identities are strongly influenced by academic disciplines (Gregory and Lodge, 2015; Hanson, 2009; Malcolm and Zukas, 2009; Henkel, 2005) and the values of the individual academic (Winter and O'Donohue, 2012), they are not bounded by simplistic demarcations along the lines of teaching, research or management (Clegg, 2008). Identities are partly shaped by the changing interactions between the academic, the discipline and the higher education institution itself (Henkel, 2005). Recent changes within higher education result in significant impacts on academics' identity (Billot, 2010), particularly changes that alter the value systems of institutions through the adoption of neoliberal values. The three interrelated policy technologies of the market, managerialism and performativity, dominate the change agenda (Ball, 2003). These interrelated policies, whose language exerts a powerful influence on how academics construct their own narratives (Malcolm and Zukas, 2009), prompts the development of new forms of interaction, new values, and new identities (Ball, 2003). Structural and ideological changes within the university pose a challenge to the strength of departments and disciplines which until now, have nurtured the development of academic identities:

> *One consequence has been that the strength of the department and its function in melding the institution and the discipline in the lives of academics have been challenged and sometimes diminished. The dominance of the discipline, too, has come under severe challenge as organising structure for knowledge production and transmission, as guardian of academic culture, and as nurturer of academic identity.*
>
> (Henkel, 2005, p.173)

As traditional academic structures weaken, the boundary between academic and institutional identity becomes less clear (Billot, 2010), with pressure on the individual to adopt the corporate university's identity and value system (Harris, 2005). Harris argues that 'the traditional notions of academic freedom, autonomy and purpose, which have been central signifiers of academic identity no longer hold' (Harris, 2005, p.421). The reconstitution of higher education structures and values contributes to ambiguity affecting academic identity, role and affiliation (McNaughton and Billot, 2016).

Within this culture of change, the emergence of educational technology offers a further challenge to the stability of academic identity. The utilisation of technology for multiple aspects of academic endeavour and the decentring nature of technology changes the way academics conceptualise images of the self (Hildebrandt and Couros, 2016). The academic self can become globalised, recognised on an array of networks and online communities where impact is accessed by one's "digital footprint" (Scanlon, 2018, p.3). One's sense of identity can also be destabilised within a teaching environment where technology augments or displaces the academic as the knowledge expert (Selwyn, 2019a). The traditional position of the academic as the sole provider of knowledge is challenged as technology provides students with a wealth of alternative sources of knowledge. Academic relationships with students, traditionally fostered within the classroom and lecture hall, may also be changed through online and technology-mediated teaching. Teaching through technology may further challenge academics sense of identity as technologies disembody (Dreyfus, 2013), disempower (McNaughton and Billot, 2016), and impact the individuals sense of presence and immediacy with students (Fletcher and Bullock, 2015; Hanson, 2009).

How academics navigate these identity challenges depends on their:

> *particular narratives, on the discourses and other cultural tools available to them and on their beliefs about learning, teaching, knowledge and research.*
>
> (McCune, 2019, p.11).

It may be preferable that academics adopt a flexible sense of identity (Billot, 2010) to enable them to navigate a changing higher education system, a blurring of boundaries, the emergence of new values and ideologies, and a rapidly evolving array of technologies that threaten to alter all facets of scholarly activity.

2.10. Educational Technology and beliefs

Key insights into our understanding of academic adoption or non-adoption of educational technology may be obtained through an interrogation of academic beliefs (Hammond, 2011). Beliefs may act as key enablers or barriers to technological integration (Prestridge, 2012), and although they do not easily lend themselves to empirical investigation (Pajares, 1992), our study of them may yield valuable insights into practice. Pajares notes both the importance and difficulty of studying beliefs:

> *Attention to the beliefs of teachers and teacher candidates should be a focus of educational research and can inform educational practice in ways that prevailing research agendas have not and cannot. The difficulty in studying teachers' beliefs has been caused by definitional problems, poor conceptualizations, and differing understandings of beliefs and belief structures.*
>
> (Pajares, 1992, p.307)

While a great deal of valuable research has contributed to our understanding of the beliefs of teachers in pre-third level education settings (see Tondeur et al., 2017; Mama and Hennessy, 2013; Kopcha, 2012; Petko, 2012; Liu, 2011; Hermans et al., 2008; Webb and Cox, 2004) there have been far fewer educational technology-focused studies of academic beliefs in higher educational contexts (Heinonen et al., 2019). Investigating these beliefs as they relate to educational technology use or non-use in academia may unveil a wealth of insight, including a greater understanding of 'second order barriers' (Kim et al., 2013; Ertmer, 1999;

Ertmer, 2005) that is, the intrinsic factors that may inhibit adoption of technology. The first order barriers (Prestridge, 2012; Ertmer, 1999; Ertmer, 2005) to technology adoption such as time, academic workload, rapid technological change, lack of academic incentives, risk, poor technology design, and shortcomings in academic professional development have been well documented (see Al-Senaidi et al., 2009; Njenga & Fourie, 2010; Gregory & Lodge, 2015; Laurillard, 2009; Kirkwood, 2009). Second order barriers include academic beliefs around issues of self-efficacy, pedagogy, and the role of technology within the learning process. Beliefs are less tangible than first order barriers and are deeply ingrained in the individual (Ertmer, 1999). This deep ingraining means that teacher beliefs are considered more influential than teacher knowledge (Pajares, 1992) and are less susceptible to rapid change (Jääskelä et al., 2017; Kim et al., 2013; Ertmer and Ottenbreit-Leftwich, 2010). Where change does occur, it tends to be incremental and gradual in its nature (Englund et al., 2017), driven by experiential practice with technology, fostered through processes of 'observation, practice, reflection, and social cultural support' (Kim et al., 2013, p.83).

2.11. Summary

As previously outlined, this enquiry seeks to explore the lived experiences of academics with regard to educational technology, generating understanding of its effects on their practice and identity, exploring their beliefs as they relate to technology, and interrogating their understanding of how technology's use and non-use impacts on their educational setting. This examination of the literature has made a deliberate attempt to steer clear of the well-worn road of considering technology from an instrumentalist perspective and has instead examined educational technology through a more social lens, considering the many factors which may influence the academic experience and perception of educational technology.

The review has highlighted the multidisciplinary field of educational technology, its various lexicons, and its changing definitions. It has laid out a series of critical views which describe the field as poorly bounded and suffering from an over-concentration on applied instrumentalist style research. The review has highlighted the growing body of critical work that seeks to challenge educational technology's orthodoxy. In framing technology as problematic, critical enquiry calls for a broader consideration of technology along social scientific lines by taking into account the political, cultural, and economic forces which may shape technology practice in education (Selwyn, 2010). The prevalence of deterministic thinking and logic has been highlighted and discussed in relation to educational technology policies that have strong neoliberal and reformist undertones. These policies pass through a complex policy actor network that seeks to invoke change at the system level and the level of individual academic practice. The review has examined the role of individual values and beliefs as they relate to educational technology and highlighted the importance of their consideration.

The following chapter builds on the knowledge acquired through this review and provides a brief overview of a number of theoretical perspectives which may be suitable for use in studies of educational technology.

CHAPTER 3 | Theoretical Perspectives

3.1. Introduction

Theory is central to the way qualitative research is conducted (Sandelowski, 1993), assisting in the development of congruence between ontological, epistemological, and methodological aspects of the research design (O'Reilly and Kiyimba, 2015). Theory may provide a lens through which to frame our enquiry, a catalyst for the development of research questions (Creswell, 2009). Theory allows us new perspectives in 'thinking' with our data (Jackson and Mazzei, 2013) and guides us towards the communication of our findings (Collins and Stockton, 2018; Reeves et al., 2008). In this chapter, I lay out my approach to the use of theory in this study. I begin with a summation of critical perspectives on the underrepresentation of theory within the body of educational technology research. This is followed by a brief overview of a range of existing theoretical approaches and frameworks which have applicability in the investigation of technology adoption and use in educational settings.

The chapter concludes with an overview of my selected theoretical approach to this study, which is based on Pierre Bourdieu's 'Theory of Practice' (Bourdieu, 1977). Bourdieu's theory makes use of the interlocking concepts of 'habitus', 'capital' and 'field'. The use of these concepts as 'thinking tools' moves us beyond a simple questioning of what academics 'do' with technology, towards considerations of systems and structures, social and cultural relations, and the meaning of practice to the individual (Beckman et al., 2018, p.198). Such an approach seeks to answer Selwyn's call for an examination of the 'uneven, contested and contradictory realities' of technology, instead seeking to see technology as a 'profoundly social, cultural and political concern' (Selwyn, 2010, p.67).

3.2.The call for theory in educational technology research

Theory is an important but neglected aspect of educational technology research (Hew et al., 2019; Antonenko, 2015; Gunn and Steel, 2012; Bennett and Oliver, 2011; Issroff and Scanlon, 2002). Theory offers the educational technology researcher a way of 'sense making' (Oliver et al., 2002), a lens through which we can understand a phenomenon and link it to broader concerns (Bennett and Oliver, 2011). Theories may provide us with useful suppositions to interrogate and understand our practices (Johnson, 2015). It can be used to assist us in our endeavours to make 'sense' of our data (Hew et al., 2019) and to construct new knowledge (Johri, 2011).

The case for the use of theory would appear to be strong, and yet we see theory marginalised by a field of research that appears occupied by 'common-sense' essentialist and instrumentalist perspectives of technology (Hamilton and Friesen, 2013). This results in the habitual separation of theoretical and empirical work, a division that gives rise to the prevalence of instrumental and practical research over emancipatory endeavours (Friesen, 2009). The lack of recognised and accepted theoretical frameworks within the field leads to 'repetition, fragmentation and segmentalism' (Howard and Maton, 2011, p.191) resulting in educational technology research being overly concentrated on the technological aspects of teaching and learning (Kirkwood and Price, 2012). Hence, we can see a great deal of recurrent work which is drawn to the practicalities of technology design and implementation while ignoring the role that theory may play in the framing of research:

> *Research into learning technology has developed a reputation for being driven by rhetoric about the revolutionary nature of new developments, for paying scant attention to theories that might be used to frame and inform research, and for producing shallow analyses that do little to inform the practice of education. Although there is theoretically-informed research in learning technology, this is in the minority, and has been actively*

marginalised by calls for applied design work. This limits opportunities to advance knowledge in the field.

(Bennett and Oliver, 2011, p.179)

The diminished standing of theory within educational technology research is perhaps surprising given the multi-disciplinary nature of the field and its participants, who have ample opportunity to draw upon and connect to theory from a range of diverse disciplines (Czerniewicz, 2010). It may be that this eclectic mix of disciplines built on differing ontological and epistemological foundations is a contributing factor in the struggles to develop coherent theoretical stances (Jones and Czerniewicz, 2011). Where theory is used, it is frequently based upon the idea of technological affordance (Oliver, 2013), an approach that has been critiqued and problematised (Selwyn, 2012a; Wright and Parchoma, 2011; Oliver, 2005). The favouring of approaches to enquiry that examine affordances and the instrumental nature of technology in education sees the field 'dominated by social psychological perspectives on learning and teaching' and a common 'enthusiasm for social-constructivist and sociocultural theories of learning' (Selwyn, 2012a, p.25). Thus, the complexities of the social aspects of technology, such as politics, practice, culture, and ideology are somewhat theoretically neglected.

The level of research contributions that leverage and speak back to theory has increased in recent years (see Jameson, 2019), and while this increase in interest is welcome, there remains a deficiency of theory use within educational technology research (Hew et al., 2019; Johnson, 2015; Oliver, 2013; Gunn and Steel, 2012; Selwyn, 2012a; Bennett and Oliver, 2011; Jones and Czerniewicz, 2011; Oliver et al., 2002). In noting these deficiencies, Selwyn also points towards shortfalls in the rigour of the application of theory where it has been used, suggesting that we may 'make better use of the theoretical traditions':

The academic study of educational technology is clearly strengthened by a broad and rigorous engagement with theory. However, there are many theoretical approaches and traditions that currently are under-utilised in the educational technology literature, yet might support the building of better questions, highlight otherwise neglected issues and to act both as a point of reference and a point of correction. As well as engaging with of unfamiliar theory, there is also a need for educational technologists to make better use of the theoretical traditions that have hitherto been favoured in accounts of education and technology. In short, there are a number of ways that researchers might improve how they 'do' theory with regards to education and technology.

(Selwyn, 2012c, p.217)

While theory may be underutilised, it is not entirely absent from the pages of educational technology research. Sian Bayne (2015) highlights the increasing use of sociomaterial approaches that aim to counter the 'black-boxing' of technology, which isolates technology from social activity, thus preventing us from examining technologies as social objects. For Johri (2011), this approach removes a dualism prevalent in educational technology literature:

…socio-materiality can play a critical role by helping us overcome an inherent dualism in the learning technologies literature between the social implications of technology use and the material aspects of technology design; this dualism either privileges the social or the technical while failing to provide proper attention to the socio-material assemblage.

(Johri, 2011, p.210).

Sociomaterial approaches aim to avoid the treatment of technologies as 'mere appendages to human intention and design, or as traces of human culture' (Fenwick et al., 2012, p.6), instead examining the whole system, both the human and non-human. The approach rejects the bias of techno-centric or human-centred perspectives, instead recognising the entanglement of the social, cultural and technological:

> *Such an alternative view asserts that materiality is integral to organizing, positing that the social and the material are constitutively entangled in everyday life. A position of constitutive entanglement does not privilege either humans or technology (in one-way interactions), nor does it link them through a form of mutual reciprocation (in two-way interactions). Instead, the social and the material are considered to be inextricably related — there is no social that is not also material, and no material that is not also social.*
>
> (Orlikowski, 2007, p.1437)

In examining other theoretical traditions which may be relevant to the educational technologists, Selwyn (2012a) highlights the relevance of a Social Shaping of Technology (SST) stance (Wajcman and MacKenzie, 1988), which encourages consideration of the social, cultural, political, economic, and organisational aspects of technology design and implementation. SST emerged through the critique of technological determinism, positioned against the development of technology through an 'inner technical logic', instead recognising the social patterns at play in the shaping of technology (Williams and Edge, 1996). SST encompasses a number of theoretical frameworks, including the social construction of technology (SCOT). SCOT studies pay particular attention to social and political forces and the differing interpretations within them which shape the development of technology (Klein and Kleinman, 2002). While SCOT is advantageous to those seeking to understand technology's design and development, it tends to pay less heed to the ongoing user experience with technology. Critics note its disregard for 'the processes through which the technology is used and shaped in situ' (Selwyn, 2012a, p.87). Oliver (2011) supports calls for the increased utilisation of SCOT approaches while also pointing to the advantages offered by other theoretical frameworks including (1) activity theory, (2) communities of practice, and (3) actor network theory (ANT). While each of these allows the researcher to examine technology from a different perspective, no single theoretical framework offers a complete picture of technology use in education:

> *Such alternatives can offer explanations of how social practices make use of technologies (activity theory, ANT), what societal considerations influenced design and use (SCOT), and what practices (at a micro level) led to their creation or assimilation (communities of practice). Each perspective, however, only offers a partial account – for example, activity theory focuses on systems rather than elements such as technology; SCOT foregrounds intentionality but downplays the way that technologies might shape practice. Communities of practice focus on the actions of groups operating in narrowly circumscribed ways, and ANT describes social practice at the expense of offering reasons for it.*
>
> (Oliver, 2013, p.381)

3.3. Frameworks for the understanding of technology use

Kimmons and Hall (2016) note a wide variety of theoretical frameworks and models available for interrogating technology and practice and a failure of any one model to account for the complexities of adoption and use. In response, they embrace theoretical pluralism and contend that each has its uses within varying contexts. Some of the more commonly utilised models in the literature include the Technological Pedagogical and Content Knowledge (TPACK) framework (Mishra and Koehler, 2006), the Technology Acceptance model (TAM) (Davis, 1989), the Technology Integration Planning (TIP) model (Hutchison and Woodward, 2018), the Technology Integration Matrix (TIM) (Allsopp et al., 2007), the Substitution Augmentation Modification Redefinition (SAMR) model (Puentedura, 2006), and the Replacement Amplification Transformation (RAT) model (Hughes et al., 2006). Each of these models may be utilised in differing contexts. For example, the SAMR model (Puentedura,

2006) has gained some degree of popularity in studies which examine changes in teaching tasks resulting from technology adoption. While not without its criticisms and limitations (see Hamilton et al., 2016), its four categorisations of change provide the researcher with a useful way to compare *task-oriented* accounts of technology use:

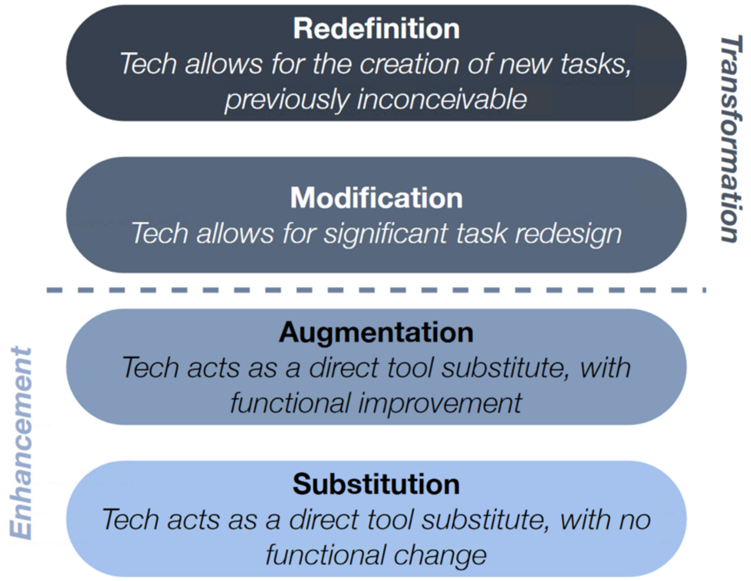

Figure 2 - SAMR (Puentedura, 2006)

At the *substitution* level, technology is used to replicate an analogue or manual task without necessarily enhancing it or providing for functional change. At the *augmentation* level, a functional improvement is provided, often in the form of productivity enhancements (Cherner and Curry, 2017). At the *modification* level, technology provides a way to alter a teaching task, while at the *redefinition* level, technology is used to enable 'novel tasks', redefining the teaching task in a way that would not be possible in a non-technological context (Hamilton et al., 2016, p.435).

While the SAMR model is useful for understanding changes to teaching *tasks*, the *Technological Pedagogical Content Knowledge* (TPACK) framework (Mishra and Koehler, 2006) provides the researcher with a mechanism for considering the knowledge required by a teacher for effective pedagogical practice with technology. This popular framework focuses on understanding the relationships between content, pedagogy, and technology knowledge, as well as the interactions between them:

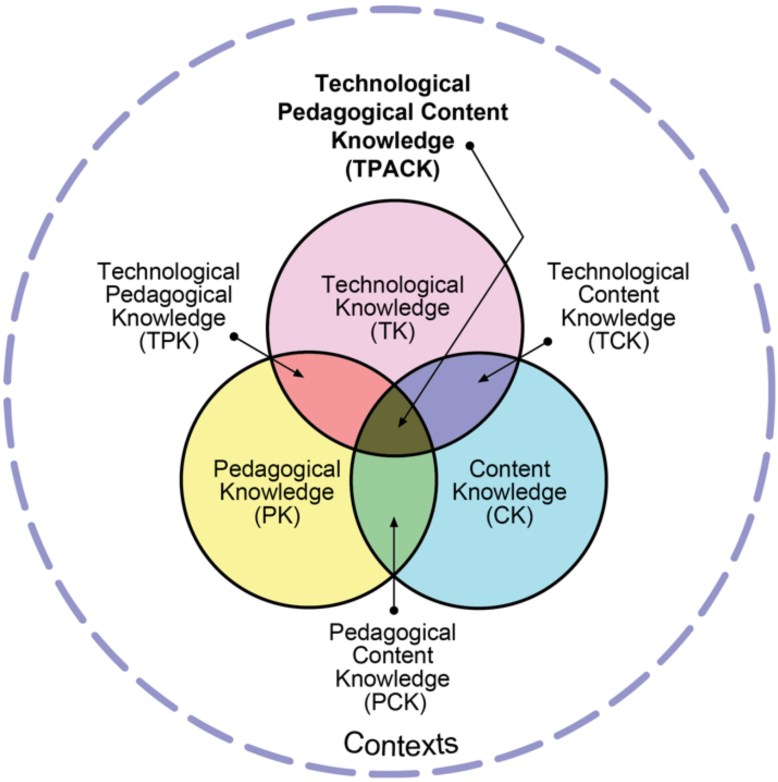

Figure 3 - TPACK (Mishra and Koehler, 2006)

The framework has been widely used as a mechanism for understanding technology integration in education settings (see Lin et al., 2013; Voogt et al., 2013; Chai et al., 2011; Angeli and Valanides, 2009; Schmidt et al., 2009) and also, albeit less frequently, in examining issues of technology integration in higher education (see Cubeles and Riu, 2018; Reyes et al., 2017; Benson and Ward, 2013; Rienties, Brouwer, Bohle Carbonell, et al., 2013). While the TPACK framework is extremely useful in considering these forms of knowledge and their importance in the context of technology use, it does not explain why some teachers fail to link their technological knowledge with practice (Rienties, Brouwer, Bohle Carbonell, et al., 2013).

Another popular model worthy of mention is the *Technology Acceptance Model* (TAM) (Davis, 1989), which asserts that an individual's beliefs regarding the *usefulness* and *ease of use* of technology are significant determinants in technology use or non-use. Based on the Theory of Planned Behaviour (Ajzen, 1991) which links intention and behaviour, the model has undergone iterations in the form of TAM2 (Venkatesh and Davis, 2000) and TAM3 (Venkatesh and Bala, 2008). The model links perceptions of usefulness and ease of use to intentions of use and considers several mediating contextual factors such as norms of use, self-efficacy, and computer playfulness. The model has been widely adopted in its various guises and iterations in efforts to understand the adoption of technology in education (see Scherer et al., 2019; Kelly, 2014; Cheung and Vogel, 2013; Chen et al., 2012; Holden and Rada, 2011; Teo et al., 2008). The model does have its critics who highlight issues with the model's simplicity, application, and theoretical accuracy (Ajibade, 2018; Chuttur, 2009). Bagozzi is particularly critical and suggests that while the original TAM was 'too simple and leaves out important variables and processes', subsequent iterations and efforts to address shortcomings with the model have resulted in a 'patchwork of many largely unintegrated and uncoordinated abridgements' (Bagozzi, 2007, p.252).

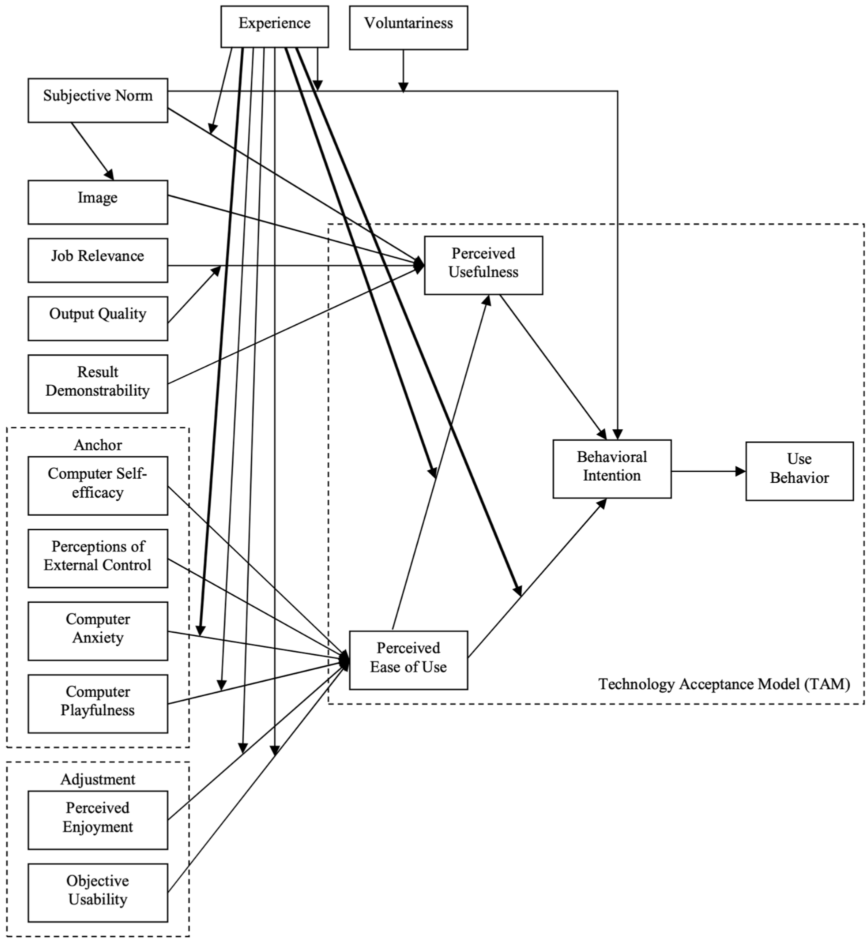

Figure 4 - TAM 3 (Venkatesh and Bala, 2008)

In critiquing the narrow focuses of both TAM and TPACK, Shelton (2018) offers an 'ecological' model for understanding the various *environmental* factors which influence academic thinking about technology. Albeit less recognised, this model is noteworthy as it is one of the only models which is specifically aimed at interrogating academic technology use in higher education, although I see no reason as to why it could not be easily modified and made applicable to other teaching contexts. The model is based on the contextual 'ecosystems' outlined by Woolfolk-Hoy *et al*. (2006) and describes seven ecosystems that may influence academic thinking about educational technology. They are 'Self', 'Immediate Context', 'State and National Context', 'Cultural Norms and Values', 'Departmental Context', 'Subject/Discipline Context' and 'Professional Context' (Shelton, 2018, p.284).

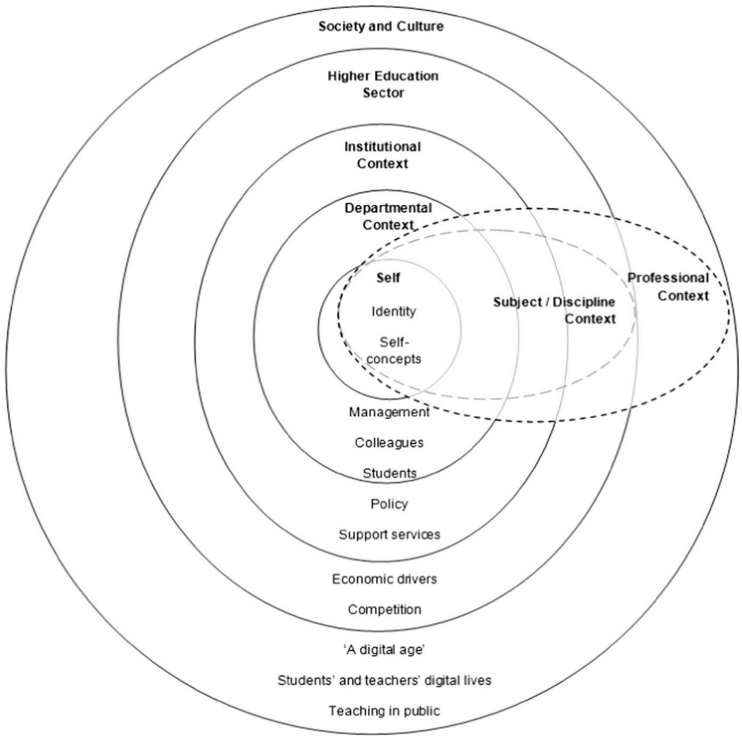

Figure 5 - Ecological model (Shelton 2018)

This model seeks to move beyond TPACK and TAM's limitations in acknowledging the complex and multifaceted nature of academic practice and the varying internal and external influences that may shape technology use. The model directs us towards considerations of '*the social, political, economic, cultural and historical*' (Selwyn, 2010, p.66), although it does not go as far as to offer a way to interrogate these ecosystems or to understand the relationships between each. Shelton acknowledges areas of future development, and as such, the model may be considered a promising work in progress.

We may conclude that no one overarching model exists which might offer us a complete understanding of technology use in educational settings. Each of the previously described models offers distinct advantages to the technology researcher and supports the examination of different facets of the complex whole of technology. Indeed, I would say that my engagement with these varying models has assisted greatly in framing elements of my thinking about my approach to the enquiry. SMAR reminded me of the need to account for what academics actually *do* with technology in their teaching practice. TAM reminded me of the need to understand the complexities of technology *acceptance and adoption*, while TPACK reminded me of the role that *knowledge* plays in our use of technology. Each model has its use, and the reader will note my brief utilisation of the SAMR model in chapter 7 when discussing the integration of technology into the participants teaching practice.

While the absence of an overarching model for the consideration of the social reality of technology use in education might be considered problematic, the multidisciplinary fields of education and technology offer us an opportunity to draw upon a variety of other theories and theoretical frameworks which may have applicability in our considerations of technology practice. A variety of multidisciplinary perspectives may enrich studies as long as ontological and epistemological differences are acknowledged and means for the communication and critique of findings are established (Drumm, 2017). Selwyn encourages the adoption of a pragmatic approach which would see us step away from the dogmatic support of particular theoretical frameworks, instead wearing our theoretical clothes 'lightly' in our attempts to 'develop a more socially grounded understanding of the messy realities of educational technology as it happens' (Selwyn, 2012a, p.93). This open and pragmatic approach was evident in aspects of my studies at Maynooth University, whereby my classmates and I were introduced to a variety of theoretical approaches and theorists, each of whom offered different ways of conceptualising the research enquiry. Key theorists such as Paulo Freire, Gilles Deleuze, Antonio Gramsci, and Michael Foucault, were all shown to offer lines of thinking which were potentially applicable in endeavours to understand academic experiences of educational technology. During my search for a theoretical foundation to this study, Dr. Larry McNutt, a colleague at the Institute of Technology Blanchardstown, suggested that the work of Pierre Bourdieu might have some relevance to my enquiry. Early engagements with Bourdieu's work, and in particular his theory of practice, offered me an array of previously hidden lenses through which I might frame my study and interrogate my findings. In the following section, I provide the reader with a brief overview of Bourdieu's Theory of Practice (Bourdieu, 1977) and my rationale for its adoption in this enquiry.

3.4. Educational Technology through a Bourdieusian Lens

Bourdieu's concepts have had a significant influence on digital social research 'both substantively and methodologically' (Ignatow, 2020, p.83). Notable examples of use include Reay's (1995) use of habitus as a method for analysing peer group interaction in urban primary schools, Naidoo's (2009) use of social capital and cultural reproduction as a conceptual framework for the study of African refugee students in Greater Western Sydney, Bennett & Maton's (2010) use of field theory, capital, and habitus in the examination of the digital native debate, Maton's (2005) examination of Higher Education policy using Bourdieu's field approach, and Belland's (2009) use of habitus to examine the study of barriers to technology integration amongst K-12 teachers. Roy Nash makes a compelling case for Bourdieu's relevance to educational research, suggesting that his concepts offer the researcher new ways to think about and conceptualise the subject of study:

> *As for Bourdieu: is it all worth the candle? If it takes the best part of a decade to make sense of the core concepts of Bourdieu's theory only to find that one has no more ability to understand the world than one did before, then perhaps not. Yet the struggle to work with Bourdieu's concepts (and perhaps with Foucault's or even with Lyotard's), is worthwhile, just because to do so forces one to think. Without concepts—the tools of thought—we will not make much progress.*
>
> (Nash, 1999, p.185)

Nash's notion of 'tools of thought' encouraged me to engage with Bourdieu's core ideas and writings with less trepidation and a greater degree of freedom and openness, using them as 'thinking tools' for defining and understanding the object of study. A growing number of scholars argue the relevance of these tools for the study of technology in education (see Apps et al., 2019; Costa, 2013; Sterne, 2003). Ignatow & Robinson (2017) outline a number of substantive reasons as to why Bourdieusian research has gained traction within the field of digital sociology, including:

> *(1) his theories' inseparability from the practice of empirical research; (2) his ontological stance combining realism and social constructionism; and (3) his familiarity with concepts developed in other disciplines and participation in interdisciplinary collaborative projects.*
>
> (Ignatow and Robinson, 2017)

Sterne (2003) suggests that the work of Bourdieu is 'friendly' to technological scholars and proposes that the study of technology requires something akin to reflexive sociology, encouraging a break from the 'illusio' of the field of educational technology. Sterne suggests that Bourdieu himself may have called for a 'epistemological break' with the 'common sense' of technology, a rupture or moment where we leave behind the logic or doxa operating in the field and gaze on objects with 'a new gaze, a sociological eye' (Bourdieu and Wacquant, 1992).

In highlighting the importance of sociological theory to the digital age, Ignatow (2020) notes the increasing utilisation of Bourdieu in digital sociology, something which he attributes to Bourdieu's occupation with rapid social change and the technology-driven shift to late capitalism, as well as his commitment to 'scientism' which 'positioned his work to contribute posthumously to rapidly advancing digital social research methodologies' (Ignatow, 2020, p.71).

Bourdieu, a key practice theorist, provides his 'Theory of Practice' (Bourdieu, 1977) which makes use of his interlocking and well-known concepts of 'habitus', ‘capital’ and ‘field’. Bourdieu (1984, p.101) uses a simple formulaic approach in describing practice as a consequence of these interlocking concepts:

[(habitus) (capital) + field] = practice

Maton offers a succinct explanation of this formula:

> *This equation can be unpacked as stating: practice results from relations between one's dispositions (habitus) and one's position in a field (capital), within the current state of play of that social arena(field).*
>
> (Maton, 2010, p.51)

Using this approach, we can conceptualise educational technology practice as more than the individuals use of technology, instead considering ‘social and cultural relations, systems and structures, and the meaning the practice has in the individual’s life’ (Beckman et al., 2018, p.198). Let us now examine each of these interlocking terms in the context of educational technology.

3.4.1. Habitus

Adopting a Bourdieusian approach to understanding practice (agency) requires an understanding of an agent’s habitus, their positioning in a field, and the field itself. Bourdieu offers the following explanation of habitus:

> *habitus, systems of durable, transposable dispositions/ structured structures predisposed to function as structuring structures, that is, as principles of the generation and structuring of practices and representations which can be objectively " regulated” and "regular” without in any way being the product of obedience to rules, objectively adapted to their goals without presupposing a conscious aiming at ends or an express mastery of the operations necessary to attain them and, being all this,*

collectively orchestrated without being the product of the orchestrating action of a conductor.

(Bourdieu, 1977, p.72)

Hence, we may understand habitus as internalised durable dispositions, neither fixed nor permanent, which can be transposed to other forms of social action, guiding ways of thinking and doing and produced by social and environmental conditions (Maton, 2010). History and lived experience play an important role in the formation of these structures as the habitus provides a link between the past, present and future, shaping current and future practice. Maton describes habitus in the following way:

habitus focuses on our ways of acting, feeling, thinking and being. It captures how we carry within us our history, how we bring this history into our present circumstances, and how we then make choices to act in certain ways and not others. This is an ongoing and active process - we are engaged in a continuous process of making history, but not under conditions entirely of our own making.

(Maton, 2010, p.52)

It is important to note the evolving nature of habitus. While it is transposable and durable (Bourdieu, 1977, p.72), it is not static and fixed. Like a person's biography, it is continually changing through the totality of the lived experience. While the habitus influences our way of being in the social world, our being in the social world in turn influences the ongoing development of the habitus. Thus, we see an internalisation of social patterns and norms and an externalisation of individual practice and dispositions. Our practice and way of being are not rigidly constrained by habitus, rather it is a guiding force that shapes our way of 'being, acting and perceiving' (Beckman et al., 2018, p.199).

Webb at al. (2010) describe four key aspects of the habitus that may be important in our endeavours to understand the role played by the habitus in academic technology practice:

> *First, knowledge (the way we understand the world, our beliefs and values) is always constructed through the habitus, rather than being passively recorded. Second, we are disposed towards certain attitudes, values or ways of behaving because of the influence exerted by our cultural trajectories. These dispositions are transposable across fields. Third, the habitus is always constituted in moments of practice. It is always 'of the moment', brought out when a set of dispositions meets a particular problem, choice or context. In other words, it can be understood as a 'feel for the game' that is everyday life. Finally, habitus operates at a level that is at least partly unconscious. Why? Because habitus is, in a sense, entirely arbitrary; there is nothing natural or essential about the values we hold, the desires we pursue, or the practices in which we engage.*
>
> (Webb et al., 2010, p.38)

This reminds us that academic knowledge of educational technologies and individual dispositions towards it are strongly guided by the habitus and the influencing sociocultural milieu. As it is '*constituted in moments of practice*', we may seek to unveil and understand aspects of the habitus through interpretative interrogations of practice. As researchers, we must also be mindful of the 'arbitrary' nature of the habitus and acknowledge the uniqueness of the habitus to the individual. While the habitus may be shaped by acceptable norms and practices within a field, an individual's history, life experiences, knowledge, beliefs and values will shape differing habitus. In our attempts to understand varying practices, we may leverage habitus as a conceptual tool which can be used to understand 'structure as occurring within small-scale interactions and activity within large-scale settings' (Reay, 2004, p.439), a way for empirical research to understand both the individual and the collective, a mechanism for dealing with the problematic divide between the micro and macro levels of society:

> *difficulties, inconsistencies, risks of determinism, and aspects of circularity in habitus can be viewed as far less problematic if habitus is viewed as method than theory; a way of seeing the world.*
>
> (Reay, 1995, p.439)

Habitus itself cannot be directly observed in empirical research and must be approached interpretively (Reay, 1995). Hence, we might ask participants to articulate their experiences with technology, their beliefs with regard to teaching and learning, their perspectives on technology policy, the imperatives for the use of technology in education, or perhaps their histories of technology use. The interpretative examination of the habitus is a sense-making experience for both participant and researcher:

> *The participant is trying to make sense of their personal and social world; the researcher is trying to make sense of the participant trying to make sense of their personal and social world.*
>
> (Smith, 2004, p.40)

3.4.2. Capital

The position or standing of individuals or institutions within a field is determined by their accumulation of capital valued by that field. The term 'capital' is used to describe the specific forms of agency and prestige within a field that is distributed and valued among the participants (Sterne, 2003). Jenkins suggests that Bourdieu writes about four common types of capital:

> *These goods can be principally differentiated into four categories: economic capital, social capital (various kinds of valued relations with significant others), cultural capital (primarily legitimate knowledge of one*

> *kind or another) and symbolic capital (prestige and social honour). The nature of positions, their 'objective definition', is to be found in their relationship to the relevant form of capital. The existence of a field presupposes and, in its functioning, creates a belief on the part of participants in the legitimacy and value of the capital which is at stake in the field.*
>
> (Jenkins, 2006, p.53)

Any resource can be conceptualised as a form of capital once it becomes an object of struggle (Ignatow, 2020). The value placed on capital accumulation and control marks these symbolic forms of capital as a derivative of economic capital. Their existence may result in the replication of class and power inequalities from the economic field, thus reproducing all too familiar forms of social inequality (Moore, 2010). Inequality may be evidenced via the hierarchical power relations within fields, with actors occupying positions of domination, subordination or equivalence, by virtue of their access to capital (Jenkins, 2006). Actors who have accumulated a significant amount of capital may have influence and even control over the forms of 'authentic' capital (Webb et al., 2010, p.23), knowledge, and practice which are legitimised within the field (Jenkins, 2006). The struggle over the recognition of practice and capital becomes a core aspect of power struggles within a field. Academics may struggle to have their practices recognised and legitimised. For example, in terms of economic capital, academics may struggle to obtain funding for research or technology resources. Social capital may be evidenced by academic membership of educational technology interest groups (e.g. user groups, journal committees and policy groups) and the social relations which are advanced through an individual's association with educational technology. Cultural capital may be attained through the ownership of certain hardware (e.g. mac vs PC), or through the use of technologies that are valued over others (e.g. online learning vs acetates), or perhaps through the attainment and use of legitimised knowledge (Jenkins, 2006, p.53). Finally, symbolic capital may be recognised through the prestige and social honour attained through the completion of formalised training, or perhaps peer recognition for the innovative use of educational technology.

While symbolic capital is valued within fields, the nature and true value of this form of capital are relatively arbitrary. Moore (2010) suggests that the failure to see these forms of capital as arbitrary and transubstantiated from economic capital is a form of ‘misrecognition’ and a type of ‘symbolic violence’:

> *The "violence" reflects the fact that the relationships within fields and their hierarchies of value are in reality purely arbitrary rather than being grounded in intrinsically worthwhile and superior principles radically detached from the this-worldly instrumentalism and materialism of mercantile exchange. The legitimations of the system of social domination and subordination constituted within and through these symbolic relations are ultimately based on "interest".*
>
> (Moore, 2010, p.104)

3.4.3. Field

In examining the practice of academics as it is shaped by educational technology, a study of habitus alone would make little sense without a study of field:

> *To talk of habitus without field and to claim to analyse ‘habitus’ without analysing ‘field’ is thus to fetishize habitus, abstracting it from the very contexts which give it meaning and in which it works*
>
> (Maton, 2010, p.61).

A field refers to a social arena, a structured system of social positions occupied either by individuals or groupings, structured internally in terms of power relations whereby participants gain position through the attainment of various forms of capital which are valued within the field (Jenkins, 2006, pp.52–53). Web *et al*. define a field as:

> *…a series of institutions, rules, rituals, conventions, categories, designations, appointments and titles which constitute an objective hierarchy, and which produce and authorise certain discourses and activities.*
>
> (Webb et al., 2010, p.21)

In relation to our understanding of practice, it is important to note that each field has its own 'distinctive logic of practice' (Thomson, 2012, p.70) whereby participants in the field understand accepted ways of behaving in the field. Collective understandings of these norms allow us to conceptualise practice, not only as internalised within the individual, but also something that is practiced within a field:

> *…the theory of practice considers practice as more than actions of an individual; practices also encompass social and cultural relations, systems and structures, and the meaning the practice holds in the individual's life. The dualistic relationship between the individual (embodied) and the social world (objective) is intrinsic in all Bourdieu's theoretical constructs.*
>
> (Beckman et al., 2018, p.199)

Like individual habitus, fields are susceptible to change over time and should not be thought of as static structures. On the contrary, the identity of fields, the positioning of individuals and institutions within fields, the value of capital within fields, and the accepted norms and beliefs are among the many facets of fields that are in a state of continual flux. A quick examination of the field of educational technology may show evidence of changing definitions of the field, changing beliefs, changing technologies, changing status among participants, and changing forms of capital. Bourdieu emphasises the importance of understanding the changing nature of fields and their history:

> *Suffice it to say that the separation of sociology and history is a disastrous division, and one totally devoid of epistemological justification: all sociology should be historical and all history sociological. In point of fact, one of the functions of the theory of fields that I propose is to make the opposition between reproduction and transformation, statics and dynamics, or structure and history, vanish . . . we cannot grasp this structure without a historical, that is, a genetic, analysis of its constitution and of the tensions that exist between positions in it, as well as between this field and other fields, and especially the field of power.*
>
> (Bourdieu and Wacquant, 1992, p.90)

Hence, any attempt to understand a field should be cognisant of the history of the field. An examination of a field of educational technology may therefore benefit from an analysis of policy, discourse, key historical events, tensions, and key individuals and institutions. In moving towards an examination of the current state of a field, Bourdieu suggests the consideration of three internally connected moments. Firstly, the position of the field must be analysed vis-a-vis the field of power, regarded as the 'dominant or preeminent field of any society' (Jenkins, 2006, p.53). Secondly, one must map out the objective structure of the relations between the positions occupied by the agents or institutions who compete for the form of specific authority of which this field is a site. And third, we analyse the habitus of agents and the different dispositions they have acquired by participating in the field (Bourdieu and Wacquant, 1992).

Webb *et al.* (2010, p.61) suggest that agents' ability to attain knowledge of and negotiate social fields is explained by two epistemological types, (1) a 'practical sense' or a 'logic of practice' and (2) a reflexive relation to the field and one's practices within it. Bourdieu (Bourdieu, 1977; Bourdieu, 1990a; Bourdieu, 1998;

Bourdieu and Wacquant, 1992) describes fields as competitive, and frequently uses the analogy of a 'game' in which agents require a 'feel for the game', that is, an understanding of the logic and rules, discourses, values, dispositions, the forms of capital recognised in the field, and strategies for improving agents positioning within the field. In developing this 'feel for the game', agents habitus is shaped, and a logic of practice is developed with time. Participation in the field may allow participants to acquire various forms of capital which are valued by the field, and in that process, increase their standing in the field.

3.4.4. Symbolic Violence, Misrecognition, and Illusio

Jenkins (2006) suggests that an understanding of Bourdieu's concepts of symbolic violence, misrecognition, and illusio are key to our understanding of the reproduction of capital within fields. In adopting these concepts as lenses through which to examine both the individual and the field, we gain further insight into the forces shaping and constraining practice.

Bourdieu describes symbolic violence as 'the violence which is exercised upon a social agent with his or her complicity' (Bourdieu and Wacquant, 1992, p.167). Symbolic violence can be thought of as an insidious form of violence, not physical violence but a symbolic form of domination which is used to maintain social hierarchy. Bourdieu describes it as a 'gentle, invisible violence, unrecognised as such' (Bourdieu, 1990a, p.127). In his examination of Bourdieu's concept of symbolic violence, Schubert (2012) describes the political struggle around legitimising our world of social classifications and hierarchies and the symbolic violence which legitimises the acceptance of these arbitrary forms of classification and hierarchy. Schubert describes it as an 'efficient form of domination in that members of the dominant classes need exert little energy to maintain their dominance' (Schubert, 2012, p.184), living by the daily rules and logic of the system while the dominated perceive these culturally and arbitrary forms of hierarchy as legitimate. This blind acceptance of the 'natural order of things' is explained by Bourdieu's accompanying concept of 'misrecognition', which Webb *et al*. (2010, p.xiv) describe as 'a form of forgetting that agents are caught up in, and produced by'. Callahan and Sandlin (2007) examine misrecognition though a critical analysis of the dominant discourses of educational technology and posit that the hegemonic process of legitimising technology use in education is a form of symbolic violence which results in the exploitation of educators who are 'brow-beaten' into the adoption of educational technology. The concept of symbolic violence may be useful in explaining the absence of critical challenges to educational technologies which are contributing factors in the rapid transformation of higher education.

The concept of 'illusio' may also be useful in understanding the logic, values and practices within the field. Bourdieu describes illusio as:

> *Illusio is the fact of being caught up in and by the game, of believing the game is "worth the candle", or more simply, that playing is worth the effort…the fact of attributing importance to a social game, the fact that what happens matters to those who are engaged in it, who are in the game…to admit that the game is worth playing and that the stakes created in and through the fact of playing are worth pursuing; it is to recognize the game and to recognize its stakes*
>
> (Bourdieu, 1998, pp.76–77)

In an examination of practice, we may question participant views on the logic of practice, the orthodoxies of technology use, and the forms of legitimized knowledge. We may also seek to gain an understanding of the rules of the game and the rewards (capital) which are to be gained through the use of educational technology.

3.4.5. Hysteresis

A final Bourdieusian concept to consider is that of hysteresis. The transformation of higher education and the speed of technological advancement and adoption may contribute to the 'destabilisation' of academia, both at the micro and macro levels. Habitus and field are entangled and to a degree mutually generated, as a change in one often entails a change in the other. While change is normally slow, technology's fast-moving and disruptive nature may cause a schism between habitus and field. Bourdieu accounts for the potential of this through the concept of hysteresis. This particular lens may be useful for the study of technology and the explanation of its effect on a field and its participants:

> *Scientific and technological changes also disrupt field structures. Any new invention brings into being new possibilities in processes and product and hence, a revaluing of legitimated positions within the field. Hysteresis necessarily follows while field participants recognize the potential of new tools, learn new skills and reposition themselves within the field.*
>
> (Hardy, 2014, p.145)

3.4.6. My approach to utilising the work of Bourdieu

While Bourdieu is widely recognised as a key social theorist, he was somewhat dismissive of the categorisation of his work as pure theory. Bourdieu himself acknowledged his theories' applicability as 'thinking tools' (Grenfell, 2014), describing them as 'open concepts designed to guide empirical work' (Bourdieu, 1990b, p.107). Bourdieu distanced his own work from the pure 'scholastic point of view' and sought a 'practical dimension to his theorising', which orients the researcher to the task at hand (Webb et al., 2010, p.47). His concepts are often contextualised in a language of 'tools' or 'lenses' (e.g. Stahl et al., 2017; Purdue and Howe, 2015; Gopaul, 2011) which may mask the importance of recognising these theories as conceptual tools to be used in empirical research, and not as concepts to be thrown about in attempts to add gravitas to one's writing (Reay, 2004). As a novice to the work of Bourdieu, I struggled with the notion that my own application of his theories might be viewed as superficial or an attempt to add theory for theory's sake. In seeking an alignment between theory and methodological approach, I found direction in the writings of Michael Grenfell who puts forward thee guiding principles for the application of Bourdieu's theories in research. They are:

1. *The construction of the research object.*
2. *A three-level approach to studying the field of the object of research.*
3. *Participant objectivation.*

(Grenfell, 2014, pp.219–220)

In discussing *the construction of the research object*, Grenfell highlights the importance of engaging in a form of 'pre-reflexive reflexivity' when adopting the conceptual tools of habitus, capital, and field. He highlights the need to see the research object 'in terms of field theory and to analyse it accordingly in relation to events, people and institutions' (2014, p.221). The attention I afforded to these conceptual tools at outset of the research design acted a catalyst for the broadening of the object of study. Bourdieu's conceptual tools prevented me from limiting the object of study to the actuality of technology use. Instead, concepts such as habitus, capital, and field aided in constructing an object of study that recognises the socially constituted and situated reality of technology practice. In defining the object of study in relation to field theory, the understanding of technology practice was considered in terms of the actuality of technology use, the dispositions and beliefs which shape use, the forms of capital and reward which encourage use, and the varying actors who recognise and legitimise technology practice. The themes of power and control also became important facets of the object of study. The sociology of Bourdieu offers us a science of human practice as well as a critique of domination (Wacquant, 1998). In considering the technology practice of academics in terms of field theory, the study sought to understand technology as a site of struggle, a contested space of power relations that seek influence over technology practice, the discourses of practice, and the knowledge of practice. Bourdieu's related conceptual tools of symbolic violence, misrecognition, illusio, and doxa, were used as a means for the examination, analysis, and explanation of the struggle which surrounds academic technology practice.

Grenfell's second key guiding principle is the previously highlighted *three-level approach to studying the field of the object of research*. For Bourdieu, this involves:

> *1. Analyse the position of the field vis-a-vis the field of power.*
> *2. Map out the objective structure of relations between the positions occupied by agents who compete for the legitimate forms of specific authority of which the field is a site.*
> *3. Analyse the habitus of agents; the systems of dispositions they have acquired by internalizing a deterministic type of social and economic condition.*
>
> (Grenfell, 2014, p.222)

This requires a focus on the three constituent parts of Bourdieu's formula for practice.

[(habitus) (capital) + field] = practice

Understanding the field *vis-a-vis the field of power* brings into focus the need to see the local field of academic practice as situated within a hierarchy of influencing fields, atop of which is the field of power. Understanding the *objective structure of relations between the positions occupied by agents* requires consideration of capital and the forms of capital that were distributed and valued at the site of study. Finally, an exploration of *habitus* which cannot be directly observed in empirical research (Reay, 2004) requires the interpretation of the dispositions, beliefs, and life histories which guide individual technology use.

Grenfell's third and final guiding principle is *participant objectivation.* Wacquant (1998, p.11) describes reflexivity as 'the most distinctive feature of Bourdieu's social theory'. He advocates for a need 'to turn the instruments of social science back upon the sociologist', to reflect on one's personal identity as a researcher, to examine one's place and role in the intellectual field, and to reflect on the risk of 'scholastic bias'. Thankfully, my academic programme of study at Maynooth University encouraged its participants to engage in reflexivity prior to, and throughout the course of study. Regular focus groups and workshops elicited individual and shared reflections on our identity and positioning as researchers. Position papers and formal presentations challenged novice researchers to justify the approach taken to the construction of the object of study and the methodology and methods best suited to its investigation. Some of the outputs of this process of reflexivity will be offered in the next chapter, whereby I will present the reader with an insight into my status as an insider researcher, my ontological and epistemological positioning, my philosophical approach to the research, and my chosen methodology.

Before I present a more detailed account of my chosen methodology to the reader, it is important to note that Bourdieu's own methodology may be referred to as *'social praxeology'* (Bourdieu and Wacquant, 1992, p.11), a structuralist and constructivist approach which makes use of both quantitative and qualitative methods. I do not approach this enquiry in the same methodological fashion, and the reader will note my adoption of a purely qualitative approach to the research which is firmly rooted in interpretivism and social constructivism. This may be perceived to be somewhat at odds to a purely Bourdieusian approach to research. However, Bourdieu himself rejects such a notion and urges us to:

> *repel any unilateral, undimensional and monomaniacal definition of sociological practice, and resist all attempts to impose one.*
>
> (Wacquant, 1989, p.54)

instead he advises a need to:

> *question and constantly challenge methodological prescriptions and interdict….In such matters, I would dare say that one rule only applies: "it is forbidden to forbid." So watch out for methodological watchdogs!*
>
> (Wacquant, 1989, p.54).

While I have benefitted immensely from the work of writers such as Michael Grenfell, who offer guidance on a Bourdieusian approach to research, I would argue that there is no set approach to Bourdieusian research. Bourdieu encouraged a form of 'methodological polytheism' (Wacquant, 1998, p.5) a somewhat pragmatic approach to the selection of research methodologies and methods which best suit the task at hand. In approaching the research task, I have given considerable thought to achieving congruence between theory and methodology. I have adopted an approach to the research which I believe is epistemically aligned to the work of Bourdieu, and in the spirit of methodological polytheism, I have selected methods that I believed were best suited to tackling the task at hand. I will provide further information on the chosen methodology and associated methods in the chapter that follows.

The relevance of the theories of Bourdieu and the practicality of application will hopefully become more evident to the reader as they progress through this thesis. In chapter 8, the second of two findings chapters, I will attempt to offer an analysis of socially situated academic technology practice, followed closely by a critique of domination and struggle relating to the academic use of technology at the site of study. I am doubtful as to whether I would have formed this object of study or offered this form of analysis where it not for my challenging but rewarding engagement with the writings of Bourdieu.

3.5. Summary

This chapter has attempted to provide a brief insight into the role of theory in educational technology studies. Theory is framed as an important but neglected aspect of educational technology research, resulting from a fixation on 'common-sense' essentialist and instrumentalist perspectives of technology (Hamilton and Friesen, 2013). The field may be further inhibited in its efforts to make use of theory by its multidisciplinary nature which contains a variety of differing, and sometimes incompatible, epistemological and theoretical stances. Despite increasing calls for the utilisation of theory, the complexities of the social aspects of educational technology such as politics, practice, culture, and ideology remain theoretically neglected. These complexities may be understood through the adoption of sociomaterial approaches (Bayne, 2015) which aim to step away from the 'black-boxing' of technology, instead recognising the entanglement of the social, cultural and technological. Selwyn (2012a) and Oliver (2011) put forward a variety of theoretical approaches suited to the investigation of educational technology which include the social construction of technology (SCOT), actor network theory (ANT), activity theory, and communities of practice.

I have sought out theoretical perspectives which will allow me to investigate academics' lived experiences of educational technology through an interrogation of practice. In choosing to adopt a 'thinking tools' approach to the use of Bourdieu's Theory of Practice (Bourdieu, 1977), I am seeking a wider understanding beyond a simple interrogation of 'what academics do' with technology. Instead, this enquiry seeks to understand the individual experience, motivations for use, the actors that influence use, the power dynamics, and hierarchies that surround educational technology use and non-use. Bourdieu's theory of practice and associated concepts offers a way to reach beyond simplistic considerations of educational technology use:

> “*The theory of practice places attention on the subtle, obscure or hidden structures and systems within education*”
>
> (Beckman et al., 2018)

While Bourdieu did not investigate digital technology practice in his writings (Sterne, 2003), his theory of practice is applicable to the study of educational technology. Bourdieu’s ideas allow us to see practice as embedded within social and cultural systems and structures. His ideas around field, habitus and capital, provide a way to understand the relational nature of social structures and individual practice (Beckman et al., 2018). His ideas on capital may provide lenses through which to study motivations for the adoption and continued use of technology, while concepts such as illusio, doxa, misrecognition, and symbolic violence, may guide us towards explanations of why technology practice is the way we find it today. His theories provide lenses through which we can attempt to understand the co-constitutive natures of practice and technology, ‘entangled in cultural, material, political and economic assemblages of great complexity’ (Bayne, 2015, p.18). In the next chapter, I will provide an overview of the methodology adopted to explore these issues.

CHAPTER 4 | Methodology and Method

4.1. Introduction

> *The dilemma of rigor or relevance. In the varied topography of professional practice, there is a high, hard ground overlooking a swamp. On the high ground, manageable problems lend themselves to solution through the use of research-based theory and technique. In the swampy lowlands, problems are messy and confusing and incapable of technical solution. The irony of this situation is that the problems of the high ground tend to be relatively unimportant to individuals or to society at large, however great their technical interest may be, while in the swamp lie the problems of greatest human concern. The practitioner is confronted with a choice. Shall he remain on the high ground where he can solve relatively unimportant problems according to his standards of rigor, or shall he descend to the swamp of important problems where he cannot be rigorous in any way he knows how to describe?*
>
> (Schön, 1995, p.28)

This chapter aims to provide the reader with a clear and transparent account of the approach taken in the research, offering rationale and insight into the decision-making process and actions taken at various points in the research journey. The chapter opens with an overview of the philosophical approach taken to the research. To help the reader understand my role in the research, I outline my own ontological and epistemological perspectives that have influenced the research design. The chapter then offers a rationale for the adoption of a case study methodology and provides descriptions of the methods used in the selection of research participants, the gathering of data, the analysis of data, and the presentation of findings. The chapter concludes with discussions on ethical considerations and the trustworthiness of the enquiry.

4.2. Philosophical approach to the research

My search for a philosophical approach to the research was aided by Guba and Lincoln (1994), who suggest that the basic beliefs that define enquiry paradigms can be summarised by proponents' responses to three fundamental questions. Firstly, there is the ontological question - What is the form and nature of reality and, therefore, what is there that can be known about it? Secondly, there is the epistemological question - What is the nature of the relationship between the knower or would-be knower and what can be known? Furthermore, there is the methodological question - How can the inquirer (would-be knower) go about finding out whatever he or she believes can be known? (Guba and Lincoln, 1994, p.108). Thus, in adopting a paradigm, a researcher should be cognisant of the answers to these fundamental questions. There is a logic to the sequencing of these questions as ontological and epistemological perspectives are frequently described as starting points in the development of a methodology (Grix, 2010; Mack, 2010; Hitchcock and Hughes, 1995). Therefore, I provide the reader with an insight into my positioning in the hope that it demonstrates a clear rationale for my chosen approach to the enquiry.

In reflecting on my positioning, I am cognisant that epistemology was not the absolute starting point of my research process. I was drawn to the sentiments of Crotty, who states:

> *Not too many of us embark on a piece of social research with epistemology as our starting point. 'I am a constructionist. Therefore, I will investigate…' Hardly. We typically start with a real-life issue that needs to be addressed, a problem that needs to be solved, a question that needs to be answered.*
>
> (Crotty, 1998, p.13).

I felt that my philosophical starting point was somewhat unclear as a result of my academic background and prior approaches to enquiry. As a computer scientist, I come from a discipline area which could be described being rooted within the positivist paradigm and also foundationalist in its approach to knowledge. The nature of any search for objective knowledge within the field of computing research can be contrasted against social research, which is not solely concerned with generalisation, prediction and control, but rather with interpretation, meaning and illumination (Scott and Usher, 2002). In shifting my research interest from computer science to sociology, I found myself in a space between opposing epistemologies, pitting 'objective' against 'subjective', and 'quantitative' against 'qualitative'. My time at this philosophical crossroads was lessened by Creswell's (2009) observation that our assumptions are not fixed and may change over time, particularly when we shift between disciplines or engage in multi-disciplinary work. Hence, I became more comfortable with the notion of adopting a dual epistemological perspective, recognising the validity and need for qualitative approaches to social research, which enable the examination of socially constructed subjective knowledge and meaning. Creswell offers a succinct description of the qualitative approach:

> *Qualitative research begins with assumptions, a worldview, the possible use of a theoretical lens, and the study of research problems inquiring into the meaning individuals or groups ascribe to a social or human problem. To study this problem, qualitative researchers use an emerging qualitative approach to inquiry, the collection of data in a natural setting sensitive to the people and places under study, and data analysis that is inductive and establishes patterns or themes. The final written report or presentation includes the voices of participants, the reflexivity of the researcher, and a complex description and interpretation of the problem, and it extends the literature or signals a call for action.*
>
> (Creswell, 2007, p.37)

My particular approach to qualitative research was underpinned by a philosophical position that can be described as being broadly interpretivist and social constructivist. Crotty offers the following useful description of this stance:

> *It is the view that all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context.*
>
> (Crotty, 1998, p.42)

In discussing the interpretivist-social constructivist stance, Creswell (2009) notes the ways individuals and groups come to understand and make sense of the world around them. He highlights the subjective nature of 'varied and multiple' meanings, which are 'negotiated socially and historically' and formed 'through interaction with others' (Creswell, 2009, p.8). The development of meaning by individuals and groups may result in multiple meanings and knowledges, which can coexist when interpretation is influenced by social, political, cultural, economic, ethnic, or gender factors, or when interpreters of equal competence or standing disagree (Guba and Lincoln, 1994: 113).

In adopting the interpretivist-social constructivist position, I aligned to the view that social research cannot be objectively observed from the outside; rather it is best understood from the point of view of those who live it (Mack, 2010; Schwandt, 2000). For Ponterotto, a distinguishing characteristic of constructivism is the 'centrality of the interaction between the investigator and the object of investigation' (Ponterotto, 2005, p.129). Interpreting meaning and knowledge necessitates purposeful interaction between the researcher and participants, with prominence given to the co-construction of meaning and findings through dialogue and interpretation (Ponterotto, 2005). As will be described later in this chapter, this was achieved through the use of methods of data generation which were both flexible and sensitive to the social context in which data was produced, enabling me to show 'an abiding concern for the life world, for the emic point of view, for understanding meaning, for grasping the actor's definition of a situation' (Schwandt, 2000, p.221).

Meaning and interpretation were grounded in the data, though like all interpretative research, observations were 'theory laden' as they were mediated by ideas and assumptions (Ormston et al., 2014). As discussed in chapter 3, meaning-making in this study was strongly influenced by the work of Pierre Bourdieu and in particular his interlocking and well-known concepts of 'habitus', 'capital' and 'field' as used in his formulaic approach in describing practice (Bourdieu, 1977). Bourdieu is probably the most frequently used theorist in the sociology of education (Gale and Lingard, 2015) and his own ontological stance combining realism and social constructionism offers a great deal in the investigation of education (Grenfell and James, 2004) and technology practice (Ignatow and Robinson, 2017; Sterne, 2003). While the predominant view in the literature is that Bourdieu leans towards a positivist conception of social science (Susen, 2011), much of his work constitutes an effort to move beyond the traditional dichotomies of social science research and he adopts a 'rationalist, constructivist orientation in opposition to crude empiricism or positivism in scientific methodology' (Robbins, 2008). As a social constructivist, I was drawn to the emphasis Bourdieu places on reflexivity. Wacquant (1998) notes Bourdieu's 'obsessive insistence on reflexivity' and highlights the attention paid to bias which may be linked to the personal identity of the researcher (social bias), the location of the researcher in the intellectual field (academic bias), and the contemplative stance adopted by the researcher (intellectual bias). Acknowledging and reflecting on these forms of bias was particularly important given that my social, academic and intellectual bias had the potential to be drawn together within my own academic identity and my position as an insider researcher.

As is common in interpretivist-constructivist research, the broad goals of the research were both idiographic and emic (Ponterotto, 2005). The research makes no claims regarding generalisation due to the deep contextual nature of the enquiry but produces a series of working hypotheses that describe the individual case in this study. The lack of broad generalisations does not diminish the value of the research in that some transferability of the hypotheses may be possible depending on the degree of temporal and contextual similarity (Guba and Lincoln, 1982). I believe that the nature of the site of study, the characteristics of participants, policy and political contexts, temporal and spatial factors, and approaches taken to the enquiry, allow for varying degrees of transferability and usefulness to others, particularly those working in the field of educational technology.

4.3. Adopting a critical perspective

While the enquiry was firmly rooted in interpretivism and constructivism, it also adopted a critical perspective that framed educational technology as problematic and worthy of critical investigation. I would subscribe to the view that all social research is to some degree critical. In my efforts to frame the stance of this enquiry, I was very much drawn to the description of critical social science put forward by Alvesson and Deetz:

> *...critical social science engages more in critique than criticism; it aims, beneath the ordinary complaints and usual oppositions, to explore and discuss assumptions and deeper social formations. Critique here refers to the examination of social institutions, ideologies, discourses (ways of constructing and reasoning about the world through the use of particular language) and forms of consciousness in terms of representation and domination. Critique explores if and how these constrain human imagination, autonomy and decision making. Attention is paid to asymmetrical relations of power, taken-for-granted assumptions and beliefs.*
>
> (Alvesson and Deetz, 2020, p.6)

Brooke (2002) argues that critical research has developed over time into a 'broad church' containing many different schools of thought on what constitutes critical research. For some, critical research's primary aims are emancipatory and transformational (Guba and Lincoln, 1994). In offering their perspective on critical research, Kincheloe *et al*. highlight the importance of emancipation, empowerment and action:

> *Critical research can be understood best in the context of the empowerment of individuals. Inquiry that aspires to the name "critical" must be connected to an attempt to confront the injustice of a particular society or public sphere within the society. Research becomes a transformative endeavor unembarrassed by the label "political" and unafraid to consummate a relationship with emancipatory consciousness.*
>
> (Kincheloe et al., 2011, p.164)

This research takes inspiration from elements of the critical paradigm but is not firmly rooted in that paradigm insofar as the primary aims of the research are not emancipatory and transformational, but rather they are exploratory and interpretative. It is situated more in critique than criticism. At the outset, the enquiry does not frame the use of technology in education as a recognised injustice but rather something to be framed as problematic and worthy of consideration along social scientific lines. The enquiry has been inspired by Neil Selwyn's (2010) call for a 'critical approach' to the study of educational technology. In response, it attempts to follow Selwyn's appeal to move beyond 'common-sense' understandings of technology, asking 'state-of-the-actual' questions, developing 'context-rich analyses' and developing 'understanding and action' (Selwyn, 2010, pp.68–71). Understanding was generated between the researcher and participants through an examination and critique of their technology use in practice. This joint critique sought to engage participants in explorations of institutional power, discourses of technology, influencing ideologies, and issues of domination and control. In the course of dialogue it was hoped that participants might explore their technology use in social, cultural and political contexts and thus begin a journey of reflecting on the various forces and influences which shaped and constrained their academic use of technology.

4.4. Taking an insider approach to the research

The enquiry was carried out at my place of work and therefore could be categorised as 'insider' research which can be defined as 'conducting research with communities or identity groups of which one is a member' (Kanuha, 2000, p.440). Anderson and Jones note the promise of insider research while also highlighting challenge and dilemma:

> *We do believe, however, that intentional, systematic, and disciplined inquiry on educational practice by "insiders," although fraught with unique epistemological, methodological, political, and ethical dilemmas, has great potential for challenging, confirming, and extending current theory and for identifying new dimensions of administrative practice for study*
>
> (Anderson and Jones, 2000, p.430)

I chose an insider research approach, as I believed that my own experiences and knowledge were 'a resource and source for exploring the ideas of others' (Holloway and Biley, 2011, p.972). My experience of the research site provided a degree of preunderstanding, consisting of both implicit and explicit knowledge as it related to the organisation and the role of educational technology within it. A preunderstanding of cultures, subcultures and informal structures within the organisation was particularly useful in the formulation of the research question and design of the research (Coghlan and Brannick, 2005). Access to the research site and the participants was made easier through existing knowledge and relationships (Hockey, 1993). For example, the purposeful sampling approach used in the selection of participants was aided by my knowledge of the different academic departments and in some cases, the staff working within them. I shared an 'identity, language, and common experiential base' (Asselin, 2003, p.100) with the research participants, which I believe allowed me to quickly build rapport, gain trust and encourage open and frank discussions during face-to-face interviews.

I was conscious that the choice to engage in insider research was not unproblematic. Hockey notes that the approach may:

> *potentially influence the whole research process - site selection, method of sampling, documentary analysis, observational techniques, and the way meaning is constructed from the field data*
>
> (Hockey, 1993, p.200).

In facing up to dilemma and risk, it was my role as an insider researcher to become risk aware rather than risk adverse (Humphrey, 2013). A constant process of reflexivity allowed me to take responsibility for my own situatedness within the research, mindful of my relationship with prospective participants, the process of data gathering, and my approach to analysis (Berger, 2015). A primary concern centred upon the notion that the research context was perhaps too familiar to me, leading to a conceivable situation where I would take things for granted and/or assume that my perspectives were more widespread than they actually were (Mercer, 2007; Hockey, 1993). To mitigate against this, I took great care to avoid communicating my own views, opinions or stories for fear that my values, beliefs and biases would be projected onto the participants, thus compromising the authenticity of participant perspectives. During semi-structured interviews, I made deliberate use of naïve questions to test assumptions and allow a mechanism for further elaboration. I also found myself questioning the language used by participants during interviews in an attempt to ensure that key points were not missed. During data analysis, I continued to guard against myopia by making multiple passes of interview transcripts in an effort to reduce the risk of superficial analysis due to an over-familiarity with language or internal cultures. In essence, I strove to make the familiar strange and the strange familiar (Hockey, 1993) and continually adopted a reflective stance in an effort to 'monitor the tension between involvement and detachment of the researcher and the researched' (Berger, 2015, p.221).

4.5. Adopting a Case Study approach

Creswell (2007) offers the researcher a useful synthesis of commonly used qualitative approaches under the broad categories of narrative research, phenomenology, grounded theory, ethnography, and case study design. While these long established methodologies continue to dominate approaches to sociological research, the recent emergence of digital sociology (Lupton, 2014; Selwyn, 2019b; Ignatow, 2020) and emerging digital research methods (see Dawson, 2019; Roberts et al., 2016) has extended our methodological repertoire for the investigation of technology practice. While contemporary approaches such as digital ethnography (Pink et al., 2015; Murthy, 2008) offer much to those investigating technology, I was drawn to the emphasis which the case study places on the collection of detailed, in-depth data involving multiple sources of information (Creswell, 2007) as well as its applicability in the conduct of exploratory studies which pose 'how' and 'why' questions (Yin, 2009). The term 'case study' is somewhat of a definitional morass (Gerring, 2004), with authors differing on the meaning of the term as well as considerations of design, implementation, and analysis (Yazan, 2015). For the purposes of this study, I was guided by the description provided by Bassey, who describes a case study in an educational setting as 'an empirical enquiry which is conducted within a localized boundary of space and time (i.e. a singularity)'; 'into interesting aspects of an educational activity, or programme, or institution, or system'; 'mainly in its natural context.' (Bassey, 1999, p.58). The qualitative case study approach can be categorised as *particularistic* in that it focuses on a particular phenomenon, *descriptive* insofar as its aims to provide a rich 'thick' description of the phenomenon, and *heuristic* in that it enhances the readers understanding of the phenomenon under investigation (Merriam, 1998).

Researchers select a case study approach based on the nature of the research and the questions being asked (Merriam, 1998). Both Stake (1995) and Yin (2009) base their approach to case studies on the constructivist stance, which views knowledge as constructed rather than discovered. As well as being congruent with my own epistemological viewpoint, the methodology was well suited to the types of questions this enquiry sought to address, namely the 'how' and 'why' of educational technology as it related to academic practice. The case study approach was also suited to the nature of this enquiry which sought to examine the use of technology along social scientific lines. Such an examination required that particular attention was paid to the interwoven contextual conditions of technology use (and non-use) within the educational space it existed in.

The question of whether to utilise a single-case design or a multiple-case design (Yin, 2009) was carefully considered. In discussing multiple-case designs, Yin highlights the robust and compelling nature of the evidence gathered through multiple cases while also warning of the 'extensive resources and time' which may be required (Yin, 2009, p.53). While a multiple-case design might have been useful in a comparative or theory building enquiry (Eisenhardt and Graebner, 2007), the single case approach allowed me to examine a case of intrinsic interest in a manner that would allow for 'an intensive, holistic description and analysis' (Merriam, 1988, p.27). My own prior research had examined technology use across multiple sites in higher education (see Farrelly et al., 2015; Farrelly et al., 2018), and while this work makes a contribution to our understanding of technology use in Irish higher education, it does not offer an in depth examination of such use within the context of the varying sociocultural spaces of educational institutions. I chose to seek understanding of technology use within these spaces through an examination of 'the particularity and complexity of a single case' (Stake, 1995, p.xi).

Merriman posits that the primary defining characteristic of a case study 'lies in the delimiting the object of study, the case' and that the case should be seen as 'a thing, a single entity, a unit around which there are boundaries' (Merriam, 1998, p.27). This case study is bounded both spatially and temporally. Spatially, it is set within a single Irish higher educational institute. Within that context, the study seeks to examine academic practice within the institute, considering the use of technology in teaching, research, and service activity. The case study makes use of a single unit of analysis, a selection of academics within the institute, seeking insight into their lived experiences of educational technology and their perceptions on how it influences their academic practice and the surrounding educational milieu. Each of the participants selected via a purposeful sampling technique constituted a sub-unit of analysis with the aggregate of individuals contributions being used to build insight and understanding. The case was also delimited temporally in that all field observations were conducted within a seven-month window spanning from September 2018 to March 2019.

In describing case study research in educational settings, Bassey highlights the central importance of gathering sufficient data to allow the researcher to 'explore significant features of the case and to put forward interpretations for what is observed' (Bassey, 1999, p.47). Investigation of this case was aided by a variety of data sources which were interrogated, thus ensuring that the research question was examined through 'multiple lenses' (Baxter and Jack, 2008). As will be discussed later in this chapter, the case study relied on semi-structured interviewing and document analysis in the gathering of data. Findings were drawn from an analysis of fifteen semi-structured interviews, combined with an analysis of sixty-three internal documents alongside a selection of institute related documents from a variety of other sources.

4.6. Participant selection

The development of a selection strategy for this qualitative study was an important step that sought to draw a representative sample from the population with the intention answering the research questions (Marshall, 1996). A purposeful sampling approach (Palinkas et al., 2015) was adopted in an effort to access 'information-rich cases' (Patton, 2002, p.230) which would be broadly representative of the differing academic groups across the site as they related to the use or non-use of educational technology. Six guiding steps as proposed by Curtis *et al*. (2000), which are derived from the work of Miles and Huberman (1994) were used to guide the selection process:

(1) *The sampling strategy should be relevant to the conceptual framework and the research questions addressed by the research*: The enquiry sought to understand academics' lived experience in relation to educational technology using Bourdieusian field theory as an analytical lens. As such, consideration was given to the need to seek out individuals who had some experience of technology, with potentially differing dispositions towards technology (habitus), who may have alternative motivations for the use of technology (capital), and who were at varying career stages and academic grades within the site of study (field position).

(2) *The sample should be likely to generate rich information on the type of phenomena which need to be studied*: Consideration was given to both the size of the sample and the need to gather rich 'thick' descriptions (Geertz, 1973) from the participants. The enquiry set out to obtain insights of a representative sample selected from circa 130 academics working at the site of investigation. The final sample size was 15 (discussed later) which provided a rich array of perspectives and insights from a varied selection of participants. The sampling approach considered the limitations on the time available for fieldwork and the associated time required to carry out a detailed analysis.

(3) *The sample should enhance the 'generalizability' of the findings*: As stated previously, this research makes no claims regarding generalisation due to the deep contextual nature of the enquiry. The final sample size of fifteen participants will not be useful for the purposes of statistical generalisation. That said, some transferability may be possible due to contextual similarity (Guba and Lincoln, 1982). To enhance transferability, the purposeful sampling strategy sought out a varied sample of academics who might share characteristics with others in the higher education field. Variation was achieved through consideration of a range of participant characteristics. First, representation from across the academic disciplines in the institute was important, with participants selected from the School of Business, the School of Humanities, and the School of Informatics & Engineering[6]. Second, gender balance was also deemed worthy of special consideration and of the final sample of fifteen participants, eight are female. Third, academic career stage (duration of academic career) was noted, as I sought perspectives from those in early academic career (0-5 years), mid-career (5-20 years), and late-career (20+ years). Finally, academic career grade was taken into account. In Irish Institutes of Technology, several academic grades exist with varying progression and promotion criteria set against each grade (Clarke, Drennan, et al., 2015; Lalor, 2010). Typically, new academic staff are appointed to the assistant lecturer grade (AL) before progressing through the lecturer grade (L), Senior Lecturer Grade (SL I), Head of Department grade (SL II), Head of School grade (SL III) and so on. For the purposes of this study, academic staff at SL II and above were categorised as management and eliminated from the sample.

[6] Academics from my own department, the Department of Informatics, were excluded from the sample due to concerns of bias and power relations. Several academics from a related discipline, Business and IT, were selected on the basis that they shared similar characteristics to Informatics lecturers in terms of identity, discipline knowledge, and general dispositions to technology.

(4) *The sample should produce believable descriptions/explanations*: Curtis at al. (2000, p.1012) acknowledge the difficulty in interpreting believability and notions of truth. In selecting a purposeful sampling strategy I sought 'information rich cases' (Patton, 2002, p.230). I hoped that the variety of perspectives from a varied set of information-rich cases would provide detailed and believable accounts. Curtis also warns against the risk of bias and attention was given to potential participant bias and power relationships between researcher and participant which might have impacted on the reliability of gathered data. A decision was taken to share transcripts with participants to confirm the validity and accuracy of provided accounts.

(5) *Is the sample strategy ethical?* My status as an insider researcher and an academic manager resulted in a detailed consideration of the ethics of the sampling process. As a first step, the methodology adopted in this study received ethical clearance from Maynooth University in April 2018. Power relationships were considered, and staff from my own department and staff on part-time hourly based contracts were excluded from the sampling process.

(6) *Is the sampling plan feasible?* Careful consideration was given to the time to complete fieldwork with nine months set aside for interviewing, transcribing and first stage coding. Consideration was also given to issues of participant availability and the time required for associated tasks such as arranging interviews, transcribing, validation of transcriptions, and early phases of analysis.

The following table contains a breakdown of participants. Pseudonyms are used to protect the anonymity of the participants. Details on academic career grade are not shown here as a further measure to assist in providing anonymity to the participants.

Pseudonym	Academic School	Gender	Career Stage	Date of Interview
Fiona	Business	Female	Mid	16th October 2018
Julia	Humanities	Female	Late	1st November 2018
Audrey	Business	Female	Late	14th November 2018
Donal	Business	Male	Late	16th November 2018
Duncan	Business	Male	Late	4th December 2018
Peter	Engineering	Male	Mid	6th December 2018
Dorothy	Business	Female	Early	10th December 2018
Ciaran	Engineering	Male	Mid	12th December 2018
Kate	Business	Female	Early	18th December 2018
Gail	Humanities	Female	Mid	5th February 2018
Megan	Humanities	Female	Early	18th February 2019
Leo	Humanities	Male	Mid	20th February 2019
Ben	Business	Male	Late	27th February 2019
Barry	Engineering	Male	Mid	1st March 2019
Irene	Humanities	Female	Early	6th March 2019

Table 1 - Study Participants

During the planning stages of the fieldwork, consideration was given to the sample size and the associated time to be set aside for interviewing and analysis. As a novice researcher I found this task challenging as estimating sample size a priori is fraught with difficulty. Marshall (1996, p.523) observes that an appropriate sample size for a qualitative enquiry is one that 'adequately answers the research', yet some estimation of sample size was needed to assist my planning for fieldwork. Guest, Bunce and Johnson (2006) noted that guidelines for determining non-probabilistic sample sizes are lacking in the literature and suggest that twelve interviews in many cases will be enough to reach saturation. My enthusiasm for this answer to the question of 'how many' was swept away by the work of Baker and Edwards (2012) who gathered and reviewed responses to the question of 'how many' from 14 renowned social scientists and 5 early career researchers. The common riposte to the question of 'how many' was 'it depends' (Baker et al., 2012, p.2). Patton provides some perspective to the dilemma of sample size selection:

> *There are no rules for sample size in qualitative inquiry. Sample size depends on what you want to know, the purpose of the inquiry, what's at stake, what will be useful, what will have credibility, and what can be done with available time and resources.*
>
> (Patton, 2002, p.244)

I began participant engagements in October 2018 with a degree of uncertainty around a finish point, holding faith in the notion that a natural point of saturation (Glaser and Strauss, 1967) would be encountered which would bring a halt to the fieldwork. This added a degree of challenge to the fieldwork as my expectations for a linear step-by-step process were replaced by somewhat of an iterative process of sampling, data collection and analysis. In the end, the final sample size was fifteen participants and in truth I felt that saturation had occurred at participant thirteen. Like many novice researchers, I didn't realise that I had enough data until I had too much data, yet in saying that, all participants' perspectives have contributed significantly to my understanding of the research questions.

4.7. Those not considered for participation in the study

Any selection process must also include a form of non-selection or exclusion and I now describe my decision making as it related to the exclusion of some academic grades from the sampling process.

As previously mentioned, the sampling process did not permit the inclusion of participants who occupied Senior Lecturer II (Head of Department) or Senior Lecturer III (Head of School) grades. These were considered as management grades and while there is often some contractual degree of teaching or student supervision associated with the role, postholders were typically occupied by strategic or operational duties (Malone, 2018; Meagher, 2017). While the voice of academic leadership has much to contribute to our understanding of educational technology and its effects on higher education, the inclusion of this voice was deemed outside the scope of this study.

A decision was also taken to exclude casual and hourly-paid teaching staff from the study. Few in number across the site of study, these staff were restricted to part-time teaching during evenings and weekends and were generally employed on a casual basis. My aspiration to 'reduce power differences', to guarantee authentic 'disclosure and authenticity' between researchers and participants, and to 'democratise the research process' (Karnieli-Miller et al., 2009, p.279) was in my opinion, inhibited by an obvious power imbalance which led me to question whether these academics would feel vulnerable and coerced into an interview process. Ultimately, I felt that my ambition to democratise participant-researcher power relations could not be met with this cohort. There was also a concern over participant anonymity. As the number of part-time hourly teaching staff was relatively low across the site of study, I was concerned that this cohort would be easily identifiable through their provided accounts.

4.8. Participant recruitment process

Prospective candidates were initially contacted by an email in which I provided a brief description of the research and sought permission to send on further details. Participants who indicated a willingness to proceed were then sent an information sheet that provided an easy-to-understand description of the research. This included information on the aims of the research, requirements for participants, data safeguarding, participant anonymity, ethics, as well as the contact details of my academic supervisor and the ethics board of Maynooth University (see Appendix A). Participants were also sent a copy of the participant consent form (see Appendix B), which needed to be completed and signed by each participant prior to the commencement of interviews.

In total, seventeen candidates received further details on the research, with fifteen confirming a willingness to participate. Two candidates did not respond to the follow-up email and were excluded from the sample. Where the opportunity presented itself, I engaged in informal exploratory conversations with prospective candidates with a view to further informing them on the nature of the research. While I was aware that participants would inevitably form preconceptions about the research (Hockey, 1993), I heeded the advice of Mercer (2007) and did not publicise my own position as it related to the research question, nor did I contribute my own stories in conversations and interviews. Instead, I made a conscious effort to position myself as a researcher with a genuine dilemma, an advocate for educational technology who had failed to fully interrogate its social effects and who was now engaged in a 'warts-and-all' interaction with academics with a view to understanding their lived experiences and perspectives on educational technology. During these exchanges, I also assured candidates of their anonymity and promised them that any views expressed would not be communicated to the institute's senior management team. It is impossible for me to tell what effect this had on participants, but in all cases I felt that the exchanges afforded me an opportunity to communicate my 'authentic self' (Yin, 2011, p.118) and put participants at ease by providing them with a clear and honest account of my motivations as a researcher and colleague.

4.9. Research Methods

There is a necessity for congruence between ontology, epistemology and methodology in terms of how they inform the choice of methods used in data collection and the subsequent analysis (O'Reilly and Kiyimba, 2015). Bryman argues that an enquiry that seeks to focus on the lived experiences of people requires an approach to research which allows the researcher to gain an 'inside view' (Bryman, 1984, p.78). In selecting methods, I adopted those which allowed me to gain an 'inside view', to engage in meaningful dialogue, to build trust, and to provide a safe space for reflection and the development of understanding.

4.9.1. Interviewing

Interviewing is a method which may be used to engage in meaningful dialogue, a form of 'personal and intimate encounter in which open, direct, verbal questions are used to elicit detailed narratives and stories' (DiCicco-Bloom and Crabtree, 2006, p.317). It is probably the most widely employed method in qualitative research and offers a great deal of flexibility to both researcher and participants (Bryman, 2012). The method was congruent with my social constructivist epistemology in that it enabled the generation of contextualised knowledge in collaboration with the participants of the study. This was an important factor in the treatment of knowledge obtained from interviews as Mason (2002) reminds us:

> *Most would agree that knowledge is at the very least reconstructed, rather than facts simply being reported, in interview settings. According to this perspective, meanings and understandings are created in an interaction, which is effectively a co-production, involving researcher and interviewees. Qualitative interviewing therefore tends to be seen as involving the construction or reconstruction of knowledge more than the excavation of it.*
>
> (Mason, 2002, pp.62–63)

In essence, qualitative interviews used within the naturalistic paradigm do not yield us access to a single objective truth, but rather multiple constructions which are revealed through a value laden interview process (Guba and Lincoln, 1982). Experiences and realties can only be 'constructed or reconstructed' and the method is dependent on the participants ability to 'verbalize, interact, conceptualize and remember' (Mason, 2002, p.64). These experiences and realities are drawn out by the conversational nature of the interview, allowing an opportunity for two-way dialogue and participant contributions (Yin, 2011). These dialogues allow us to 'conjure up' the social experiences and processes which we are interested in exploring (Mason, 2002, p.64). Kvale (2006) is critical of the overuse of the word 'dialogue' and reminds us that while interviews are often portrayed as a democratic and egalitarian form of social research, the language used to describe them often masks power dynamics. The interview is not a 'dominance-free dialogue between equal partners' but rather a 'hierarchical and instrumental form of conversation' in which the researcher holds a monopoly over interpretation (Kvale, 2006, pp.484–485). Therefore, as a researcher, I attempted to make transparent these dynamics so that the reader may judge their potential effect on the knowledge produced.

I approached the interview process as somewhat of a novice, armed with the theoretical knowledge of what I was about to do, but lacking in practical experience. To aid me, I made use of an interview protocol (Rubin and Rubin, 2005, pp.147–150) which outlined the main topics for discussion along with some probing questions on each one (see Appendix C). A pilot interview was conducted with Fiona (1st participant) and the interview protocol was modified slightly following a review of that session. The remaining fourteen participants were then interviewed between October 2018 and March 2019. Interviews ranged from 42 to 96 minutes and averaged 72 minutes in duration. In one instance (interview 5 with Duncan), the interview was divided into two sessions due to a sudden change in the participant's availability. Before each interview session, participants were asked to reflect on their use of technology and its effects on their role and lived experience as an academic. Each interview commenced with a conversation regarding the participant's views of everyday technology. This topic provided some valuable insights into the participant's existing dispositions while also serving as a useful icebreaker. No two interviews were the same in terms of the ebb and flow of conversation, yet all managed to cover the major themes and sub-themes as described in the interview protocol (Appendix C). Interviews were recorded on two secure digital recording devices for redundancy purposes, with recordings used for transcription and later analysis. Transcriptions were made available to participants for review and feedback.

4.9.2. Document Analysis

The case study approach allows for the collection of in-depth data involving multiple sources of information (Creswell, 2007; Yin, 2009). Documents are often used as sources of data in case study work and are particularly useful in qualitative case studies that seek out rich thick descriptions of the case under investigation (Yin, 2009; Stake, 1995). Bowen (2009, p.30) outlines five specific functions of documentary material in qualitative studies. First, documents can be used to provide insight into the context in which the research participants are operating. Second, document analysis efforts undertaken early in the data gathering process may prompt questions and new lines of enquiry. Third, documents may constitute a valuable source of secondary research data. Fourth, documents may provide a 'means of tracking change and development', a way of understanding change in the case over time. Fifth, documents may be useful in attempts to corroborate evidence from other sources, improving efforts of triangulation (Patton, 2002; Denzin, 1978).

When considering document analysis, the researcher may be drawn to print and electronic documents, which are primarily text-based in their composition. Considering only text as a medium for analysis may pull our attention away from various other document types that might yield rich data and insight. For the purposes of this enquiry, documents were defined as any 'symbolic representation that can be recorded and retrieved for description and analysis' (Altheide et al., 2008, p.127). The adoption of this definition at the outset of the data gathering process allowed for the consideration of a variety of documentation types, including physical print, electronic, rich media, and internet-based documents. Documents relating to this case which were deemed worthy of analysis were gathered from the institutes document management system, its intranet, and its public websites. Documents were also retrieved from a number of other related websites including state and semi-state bodies such as the Higher Education Authority (HEA), Quality and Qualifications Ireland (QQI), The National Forum, and the Department of Education. Particular attention was paid to the following categories of documentation:

- Human Resource policies and guidelines
- Information technology policies and guidelines
- Student handbooks, policies and guidelines
- Quality assurance documents (including policies and procedures)
- Student survey instruments
- Institutional strategy documents
- Academic programme validation documents
- Press and media releases
- Reports to external bodies such as the HEA and QQI
- HEA generated reports and statistics

National policies regarding educational technology were also examined in an effort to appraise the wider context in which the case was situated (Gillham, 2010). A total of sixty-three documents originating from the institution were examined prior to the commencement of the participant interview process. In fitting with the overarching philosophical approach to the study, the documents analysed as part of this research were conceived as the products of social construction. Documents were viewed as 'situated products', produced within social settings, which required that attention to be given to the dynamic involved in the relationships between 'production, consumption, and content' (Prior, 2016, p.26). Documents were skimmed, read, and interpreted (Bowen, 2009) and a process of thematic analysis (Boyatzis, 1998) based on the approach of Braun and Clarke (2006) was undertaken. A more in-depth description of my overall approach to analysis and coding is provided in the following section. The systematic analysis of these documents and my search for patterns and themes within them was carried out using a combination of document annotation and analytic memo writing. The reader should note that qualitative data analysis software (QDAS) was not used for the analysis of institutional documentation but was later used for the analysis of participant interviews and national policy documentation. This was in part, a decision of timing with respect to my developing proficiency with qualitative data analysis software. A retrospective analysis using QDAS was considered, but as will be evident in the findings chapters, the breath of information gleaned from the corpus did not warrant a second pass of the corpus for the purposes of consistency in QDAS use across all of the data.

4.10. Data Analysis & Coding

> *There are no formulas for determining significance. No ways exist of perfectly replicating the researcher's analytical thought processes. No straightforward tests can be applied for reliability and validity. In short, no absolute rules exist except perhaps this: Do your very best with your full intellect to fairly represent the data and communicate what the data reveal given the purpose of the study.*
>
> *(Patton, 2002, p.433)*

Searching for the 'right way' to approach data analysis was a task that perplexed me for some time. Literature is awash with competing views on strategies for analysis, and I found myself seeking out the perfect 'instructional cookbook' (Yin, 2011, p.176) that I could apply to my data. My attendance at a seminar on qualitative analysis techniques introduced me to the writings of Richard E. Boyatzis and the concept of thematic analysis. Thematic analysis is a tool that can be used across different methods, a way of 'seeing' and making sense of data (Boyatzis, 1998). In essence, it is a search for themes, a form of pattern recognition across the data whereby developed themes become categories for analysis (Fereday and Muir-Cochrane, 2006). It is a flexible method of analysis, and although it is not wed to any pre-existing theoretical framework, it is well suited to the constructivist-interpretivist approach to research (Braun and Clarke, 2006).

My first attempt at thematic analysis involved experimentation with a hybrid approach (Swain, 2018; Fereday and Muir-Cochrane, 2006) that combined inductive and deductive thematic thinking. The hybrid approach involved the development of a codebook of a priori themes and the iterative addition of a posteriori codes during coding. Although the approach offered some structure and scaffolding of the process, it did not sit well with me. Thomas (2006) notes that within deductive approaches, 'key themes are often obscured, reframed, or left invisible because of the preconceptions in the data collection and data analysis procedures imposed by investigators' (Thomas, 2006, p.238). I could not shake the feeling that in my search for predetermined codes, I was missing the identification of new ones no matter how obviously they may have sat within the data. Hence, I abandoned the hybrid approach favouring a more inductive approach based on the six-step process of Braun and Clarke (2006). While I describe the approach as inductive, it was not carried out in a theoretical or epistemological vacuum, as my thinking about codes and themes was influenced by my life history, my existing research, my engagements with literature, and my earlier experiments with analysis.

4.10.1. The use of qualitative data analysis software

Prior to the commencement of interview analysis, all transcribed interviews were added to NVIVO qualitative data analysis software (QDAS). Although the researcher remains the main tool of analysis, the NVIVO tool provides efficiencies in the management of data and ideas, data queries, data visualisation, and report generation (Bazeley and Jackson, 2013). It also offers particular advantages in data interrogation, which can in turn, improve the rigour of the analysis by validating (or not) some of the researcher's own impressions of the data (Welsh, 2002). Using QDAS in a systematic way can enhance the validity of the research (Siccama and Penna, 2008), and with this in mind, I attended a two-day intensive training programme on NVIVO, which was instrumental to my appropriate use of the tool. I make deliberate use of the word 'tool' in describing NVIVO as it is one of many tools that the researcher might make use of during the course of data analysis. Over-reliance on it as a single tool of analysis may cause software-behaviour and features to overly influence or dictate method-behaviour (Paulus et al., 2017). To negate this, I consistently reflected on the decisions I was taking regarding the use of the software, while also making use of more traditional forms of coding, including the tried and trusted highlighter and paper transcript.

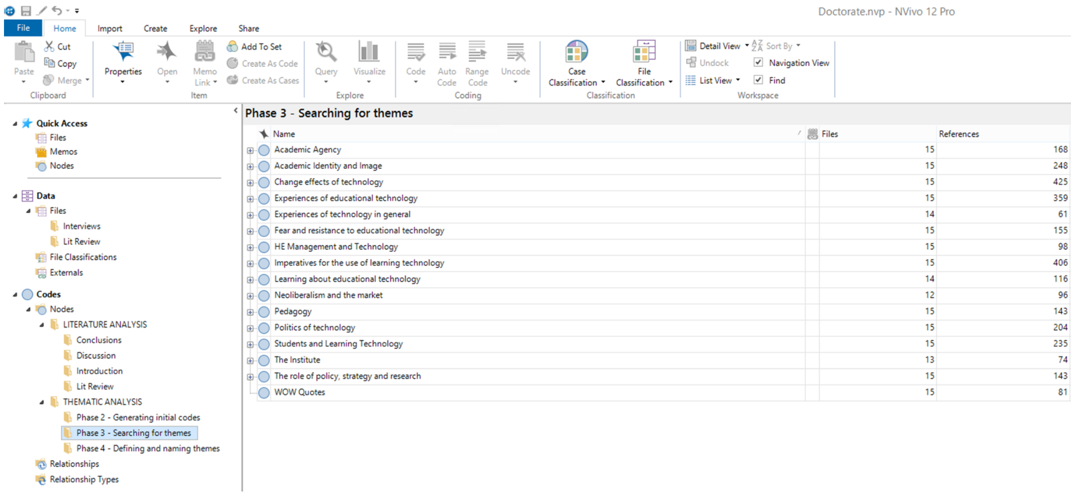

Figure 6 - Thematic Analysis using NVIVO

4.10.2. Stages of analysis

The approach to analysis was based on the thematic analysis approach of Braun and Clarke (2006) which describes the search for semantic and latent themes using a six step process that is iterative in nature. The first phase of the analysis involved familiarisation with the data. Transcripts had been produced verbatim for each of the fifteen participants and the familiarisation phase involved repeated readings of these transcripts alongside each of the audio recordings. During this phase, I made detailed notes in Microsoft Word on each of the participants and their responses to key themes within the interview. This afforded me a dive into the data without the added complexity of acclimatising to the first time use of NVIVO. While time-consuming, it was an essential exercise in getting to know the data before working with it in NVIVO. A sample of the notes taken relating to three participant transcripts are contained in Appendix D of this document.

Phase 2 of the analysis involved the generation of initial codes using NVIVO. This involved a second pass of the data for the purpose of identifying codes. Codes are defined as:

> *a feature of the data (semantic content or latent) that appears interesting to the analyst, and refer to 'the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon' (Boyatzis, 1998: 63).*
>
> (Braun and Clarke, 2006, p.88)

In essence, they are tags or labels for assigning units of meaning to elements of the data (Miles and Huberman, 1994). As I have already mentioned, I adopted an inductive approach (Thomas, 2006) in my search for codes which involved the temporary setting aside of prior assumptions, theories, or hypotheses in order to let the data 'speak' to me as I traversed it. Codes were selected on the basis of capturing the 'qualitative richness of the phenomenon' (Boyatzis, 1998, p.1) and coded in advance of any deep level of interpretation. I tried to capture elements within the data that were of interest to me, elements that I felt would contribute to my understanding of the research at hand. New codes were created as encountered, and the process became reflective and iterative (Fereday and Muir-Cochrane, 2006, p.83) in that I would work my way back to check if newly discovered codes also existed within previously coded data. Once found, codes were named in a manner linked to the concept being described. A planned 'second pass' of the data was in reality, a series of iterative and recursive passes resulting in multiple readings of each transcript. During this phase of coding, a code may have been generated from a word, a sentence, a paragraph, or an entire page of text (Saldaña, 2013). For the most part, I found myself coding sentences and paragraphs and avoided single words to avoid the problem of 'losing the context of what is said' (Bryman, 2012, p.578). In total, this phase of coding resulted in the generation of 134 open codes based on the suggestion to code for as many themes/patterns as possible (Braun and Clarke, 2006) with a view to a follow on process of synthesis and reorganisation. A full list of codes generated in this phase is available in Appendix E.

Phase 3 of the analysis began the search for themes. The primary aim of this stage was the refinement of codes and the development of categories. Codes were revisited, and a process of relabelling, reorganising, combining, and deleting commenced as I moved towards a series of candidate themes. Emphasis was placed on developing a conceptual and structural order (Miles and Huberman, 1994) with crosschecking carried out against the conceptual framework and earlier attempts at a deductive codebook. At the conclusion of this phase, the initial 134 open codes were refined and organised into 16 broad categories consisting of 110 child codes. A full list of categories and associated codes generated in this phase is available in Appendix F.

Phase 4 of the process was a combination of the 4th and 5th phases of the Braun and Clarke approach (Braun and Clarke, 2006), with the primary focus aimed at the development and naming of themes. Patton's (1990) dual criteria of internal homogeneity and external heterogeneity were used to review the 16 candidate themes. The process resulted in the generation of five key themes. These were:

- *Theme 1: Imperatives for the use of educational technology*: This theme sought to capture participants' rationales for their use of technology. This included perspectives on the normative practices of others, the institutional culture as it related to technology, the influence of students and their perceived needs, and the influences of the outside world.

- *Theme 2: Technology and the Academic*: This theme focused on the participants' lived experiences, capturing insights into changes to their practice and identity. The theme also focused on beliefs and the impact that technology had on themselves and others in their educational milieu.

- *Theme 3: Technology and the Institute*: This theme captured the participants' views on the institute, strategic intent with regard to technology, management of technology, support for technology, and the prominence and status of technology within the varying academic disciplines.

- *Theme 4: Technology and the Student*: This theme captured participants' perspectives on their students, in particular, the participants' beliefs concerning students and technology, student behaviours, student experiences, and views on differing student demographics.

- *Theme 5: Technology as a site of struggle*: This theme captured participants' accounts of struggle, fear, resistance, tension, failure and judgement.

4.11. Ethical considerations

Qualitative researchers need to uphold one critical trait: the need to bring a strong sense of ethics to the research (Yin, 2011). Ethics may raise numerous quandaries for the qualitative researcher as articulated by Shaw (2003):

> *The ethics of qualitative research design pose distinctive demands on principles of informed consent, confidentiality and privacy, social justice, and practitioner research. Fieldwork ethics raise special considerations regarding power, reciprocity and contextual relevance. Ethical issues*

> *raised by the analysis and dissemination of qualitative enquiry emphasize questions concerning narrative research, outcomes and justice, and the utilization of research.*
>
> (Shaw, 2003, p.9)

Like many research students, fieldwork for this study was not permitted to begin until I had obtained ethical clearance from the university research committee. Ethical clearance for this research was obtained from Maynooth University in April 2018, and continual attention to ethics was practised at all stages of the research.

My focus on ethics was not limited to the procedural process of navigating an ethics committee. Instead, I deliberately oriented myself towards 'ethics in practice' (Guillemin and Gillam, 2004), giving ongoing attention to ethics at all stages of the research process. Flick (2009) reminds us of the importance of ethics in qualitative research and prompts for considerations of scientific quality, participant welfare, data collection and analysis, and confidentiality. In considering procedural ethics and 'ethics in practice', I identified the below ethical issues as particularly relevant to this enquiry.

4.11.1. Informed Consent

Consent should be both informed and voluntary (Israel and Hay, 2006). Informed consent entails informing the research participants about the overall purpose of the enquiry and the main features of the methodology, as well as possible risks and benefits from participation in the enquiry (Kvale and ebrary, 2007, p.27). Informed consent was achieved in a number of ways. During the recruitment process, participants were sent a short document outlining the purpose of the research, its format, the voluntary nature of participation, confidentiality and anonymity, and the approach to data management. Contact details for my academic supervisor and the university ethics board were also included (see Appendix A). At that time, participants were also provided with a copy of the consent form to be signed prior to the start of an interview (see Appendix B).

I spoke with each participant at the start of each interview session, reminding them of the details of the study, their role in it, and the voluntary nature of their participation. Participants were then asked to sign a consent form (see Appendix B) and reminded that they could withdraw from the study at any time.

4.11.2. Confidentiality and anonymity

These two topics are dealt with together as ‘anonymity is one way in which confidentiality is operationalised’ (Wiles et al., 2008, p.417). I have made every effort through my actions, to avoid compromising participant dignity or rights to privacy through the collection, analysis and disposal stages of the research. The processing and storage of information complied with the Irish data protection act 2018 (and subsequent amendments). A number of recommended methodological precautions (Israel and Hay, 2006, pp.82–85) were implemented to protect the anonymity of participants. These included:

- The use of pseudonyms in the reporting of the research
- The use of pseudonyms in digital copies of transcripts and other data sources
- The removal of unnecessary participant identifiers e.g. their academic grade, associated modules or course etc
- The secure storage and processing of all electronic and other forms of data associated with the study

4.11.3. Power Relationships

This interpretivist-constructivist approach to qualitative research strived for the co-construction of new knowledge between researcher and participants in a democratised and egalitarian way. However, it is important to acknowledge the hierarchical nature of my relationship with the participants and confront it in a manner which gives some credence to my consideration of it. Creswell notes that the study of one's workplace can raise questions about whether good data can be collected when the data collection act may introduce power relationship issues between researcher and the individuals being studied (Creswell, 2009, p.122). Karnieli-Miller *et al*. (2009) identify five stages of the research process which may be effected by power relations. These are 1: Initial stage of subject/participant recruitment; 2. Data collection; 3. Data analysis and production of the report; 4. Validation; and 5. Additional publications from the same source material. I will now briefly outline my considerations of power relations during each of these five stages:

> 1: Initial stage of subject/participant recruitment: During this stage, I decided not to work with any of the staff in my own department. The hierarchical nature of our close working relationship raised too many dilemmas and may have compromised the validity of the data and findings. As previously described, prospective participants were initially contacted by email in which I provided a brief description of the research and sought permission to send on further details. Participants who indicated a willingness to proceed were then sent an information sheet that provided an easy-to-understand description of the research and a copy of the consent form. Participants had an opportunity to withdraw from the research or interrogate its aims and methodology. Participants were repeatedly reminded of the voluntary nature of the research and their role in it. Participants also had the power to withdraw from the study at any juncture.
>
> 2. Data collection: During this stage, it may appear that the power resides with the participants as the researcher is entirely dependent on their willingness to take part (Karnieli-Miller et al., 2009). Kvale (2006) highlights a number of factors that contribute to power asymmetries in interview relationships, including interviewer control over time and

location, interview control over dialogue, and interviewer monopoly of interpretation. I sought to negate these imbalances in a number of ways. Firstly, participants were asked to select a time and a location which suited them. I wanted the interview to be conducted on their terms and in a location that they were comfortable in. Secondly, the semi-structured nature of the interview gave the participants a deal of control over the flow of the conversation. Finally, participants were encouraged to ask questions and challenge my interpretations as the interview progressed. I frequently verbalised my interpretations which were open to contribution or challenge.

3. Data analysis and production of the report: This is perhaps the phase of the research in which I retained absolute control. I took the decision not to involve participants in the analysis or write up. Factors that influenced this decision included time and resource constraints, participant availability, and issues regarding the sensitive nature of some of the findings. To ensure reliability at the analysis stage, I kept a trail of my key decisions and have provided them in each stage of the thematic analysis. I also maintained all of my raw data, field notes and transcripts in the form of an audit trail for peer review (Nowell et al., 2017).

4. Validation: As part of the validation effort, participants were provided with access to their transcripts and encouraged to comment on their contents.

5. Additional publications from the same source material: Through informed consent, participants agreed that anonymised data would be kept for future research purposes, such as publications related to this enquiry. I have provided undertakings, both verbal and written, that participant data will be treated in a confidential, anonymous, fair and secure manner.

I also gave consideration to the professional and political dilemmas (Hanson, 2013; Humphrey, 2013) which might arise though power relationships. For example, while I sought to mitigate risk by only working with academics from other disciplines, there was always a chance that future circumstance might result in one of more participants working in roles in the future that have direct or indirect line management relationships with me. Aware that many ethical dilemmas of fieldwork arise from unintended consequences (De Laine, 2000), I committed to an ongoing process of reflexivity with respect to the interpersonal and institutional dilemmas which might have arisen during or post the research process, committing to treat them with maturity, sensitivity, authenticity, and integrity (De Laine, 2000, p.16).

4.11.4. Researcher Bias

As previously highlighted, I have previously occupied a role responsible for the introduction of educational technology to the site of study. There is therefore a risk of researcher bias in the interpretation and/or presentation of results. I acknowledge that the researcher shapes the research, and I aimed to build in rigour through a number of mechanisms described later in this chapter (see the section on trustworthiness). I also believe that the methods used (interviews and document analysis) assisted in the mitigation against bias through the sharing of transcripts and a participatory dialogue around understandings and interpretations. I took some comfort in the observations of Bogdan and Biklen (1982, p.46) who suggested that many of our opinions and prejudices are somewhat superficial and may be altered through meaningful engagement with participants.

4.12. The Trustworthiness of the Enquiry

The nature of knowledge within the naturalistic paradigm differs from that of the rationalistic paradigm and thus we see differing criteria for measuring the validity and trustworthiness of research in both. Within the rationalistic paradigm, the goals for trustworthiness include 'Internal Validity', 'External Validity/Generalisability', 'Reliability' and 'Objectivity' (Guba, 1981, p.80). These criteria do not sit well with the nature of this naturalistic research, and hence another way of establishing trustworthiness was required. Ultimately, I do not view the findings of this research as a captured objective truth, and in an effort to frame the research as trustworthy, I refer to Guba's four alternate criteria for judging the trustworthiness of enquiries conducted within the naturalistic enquiry paradigm. The criteria he proposes are 1. Credibility; 2. Transferability; 3. Dependability; and 4. Confirmability (Guba, 1981, p.83). These criteria have been widely adopted in qualitative research and I now outline my approach to each of them within the context of this research.

4.12.1. Credibility

According to Merriman and Tisdell (2015), creditability deals with the question of how congruent are the findings with reality and suggest that assessing the 'isomorphism' between collected data and the reality from which it was derived is a valid measure of credibility. The credibility of the research is demonstrated in a number of ways:

1. The study aimed for methodological coherence through question, method, data collection, and analysis (Morse et al., 2002).
2. The study made use of well-recognised methods and associated protocols for the gathering and analysis of data. The use of the case study methodology and associated methods such as interviewing and document analysis is well established in qualitative research (Yin, 2009).
3. The researcher has engaged in a prolonged engagement in the field (Lincoln and Guba, 1986) and has over 17 years of experience of the site in question.
4. Triangulation (Denzin, 1978) across data gathering methods has been used to enhance the validity of the findings.

5. Peer consultation and scrutiny was also utilised. As part of my structured doctorate experience in Maynooth, I was required to present details on my research, methodology, methods, analysis and findings on a regular basis. These would be critiqued by fellow students and a group of academic supervisors. Two formal presentations on research progress were also made to the Centre for Research in Adult Learning and Education (CRALE) at Maynooth University[7]. All aspects of the work were also conducted under the guidance of my academic supervisor.

4.12.2. Transferability

Transferability is used in opposition to the criteria of external validity/generalisability as favoured by proponents of the rationalistic paradigm. This research provides an in-depth study of a small purposeful sample within a single site, and goals of generalizability are not a primary concern. That said, there are a number of facets of this study which may aid transferability. These include:

1. 'Thick descriptive data' (Lincoln and Guba, 1986, p.77) has been used regarding the context of the study so that the reader may make inferences about the transferability of the findings to other contexts.
2. Purposive sampling has been used to gather information that is 'intended to maximize the range of information uncovered' (Guba, 1981, p.86) increasing the probability of relevance in other contexts.

4.12.3. Dependability

Within the rationalistic paradigm, reliability or dependability would depend on the extent to which the research findings can be replicated. This is problematic within the social sciences as human behaviour is never static (Merriam and

[7] https://www.maynoothuniversity.ie/adult-and-community-education/centre-research-adult-learning-education-crale

Tisdell, 2015), and the temporal and spatial characteristics of this study have also impacted on the likelihood of yielding identical results should it be replicated. Regardless, some steps have been taken to aid the dependability of the study:

1. To aid dependability, this study made use of several overlapping methods within a case study methodology, which allowed for in in-depth data collection. These have yielded 'thick descriptions' of data as well as enabling the use of triangulation.
2. Dependability has been aided through the provision of a rich description of the process which is 'reported in detail, thereby enabling a future researcher to repeat the work' (Shenton, 2004, p.71). Thus, the research contains detailed descriptions of the process leading to the development of the research question, the chosen methodology, methods adopted, operational details of data collection, and the approach adopted in the analysis of collected data.

4.12.4. Confirmability

Guba (1981) suggests that research conducted in the naturalistic paradigm should be assessed along the lines of confirmability in opposition to a search for pure rational objectivity. Confirmability relates to the notion that the research is free from unacknowledged bias and that findings have been driven by the experiences of the participants as opposed to those of the researcher. Several steps were taken to develop the confirmability of the study:

1. Miles and Huberman suggest that the researcher be 'explicit and as self-aware as possible about personal assumptions, values and biases, affective states and how they may have come into play during the study' (Miles and Huberman, 1994, p.278). With that in mind I have provided the reader with a relevant biography, an outline of my positioning as it

relates to educational technology, and my positioning on ontology and epistemology affecting my approach to the research.

2. I have also made use of prudent data collection and archival methods and presented the data in a way that is accessible to the reader.
3. Full copies of transcripts were provided to participants for the purposes of feedback and verification. My approach to coding and analysis of the transcripts and related documents has been fully documented, creating an audit trail of decisions and action which is transparent to the reader.

4.13. Conclusion

In this chapter, I have described an approach to research that can be broadly defined as interpretative. I believe that this approach matched my ambition to conduct a critical examination of educational technology's use and its effect on academic lived experience. Though considerations of ontology and epistemology, I have attempted to highlight my research approach's suitability, which aligns with my social constructivist stance. This perspective has influenced the approach to methodology and method and influenced the later analysis and presentation of the data. The findings of this research are now presented in the following two chapters.

CHAPTER 5 | Findings Part 1

And you may ask yourself, "Well... how did I get here?"
...
And you may ask yourself, "How do I work this?"
...
And you may ask yourself, "Where does that highway go to?"
And you may ask yourself, "Am I right? Am I wrong?"
And you may say to yourself, "My God! What have I done?"

('Once in a Lifetime' - Talking Heads and Brian Eno, 1981)

5.1. Introduction

Chapters 5 and 6 now present the findings from the research, which explores the lived experiences of a sample of academics with regard to educational technology use. The research sought to understand the influence of technology on academic practice, the technology-related values and beliefs held by academics, the consequences of technology usage, the difficulties and tensions surrounding technology, and the factors that influence academic adoption of technology. The findings, which are now presented in response to these questions, are based on the analysis of the accounts of fifteen academics who occupied a variety of roles across different academic disciplines within the institution.

This chapter focuses on the participants' perspectives of technology as it related to their academic practice. Through participant voice, it describes transitions in practice, insights into how academic technology practice is informed, and descriptions of the key influences that shape and guide academic technology practice. The presentation of findings opens with an insight into the participants' accounts of changes in practice, with the participants describing their transitions into technology practice in a language of time, space, and task. For many of these participants, reflections on technology practice as it occurred over time, reveals a process of gradualism over revolution. Participants described a slow-moving, gentle normalisation of digital technology use, so slow and incremental as to almost render technology invisible to reflection and critical questioning. For some participants, the transition has been marked by moments of disruption and displacement, especially in movements to new online teaching technologies. New digital teaching technologies are linked to conceptualisations of new practice spaces, which have brought about a change in participants patterns of engagement and the means by which work is conducted. These new ways of working include a pedagogic change which is linked to the destabilising presence of technology, disrupting the individual's sense of identity and their conceptualisation of practice. A key dilemma emerges for some participants who seek to understand their own relevance and place in the face of new technologies which appear to displace the academic from the centricity of the teaching experience.

Also noteworthy are the findings which highlight the participants' strategies for informing their individual academic technology practice. These participants downplayed the usefulness of formalised training opportunities and instead emphasised the significant influence of peer knowledge sharing, experimentation, and technology playfulness. Connected to the theme of informing practice, is the exploration of influences. In exploring influences on practice, the participants contextualised their own approaches to practice within the wider societal discourses of the 'technological imperative' and the 'knowledge economy'. The related discourses of employability, modernisation, and transformation were used to frame technology as an essential facet of the modern educational experience.

Finally, policy and research were also explored as potential sources of influence over practice. Many of the participants communicated a broad disinterest in policy and research and demonstrated a willingness to rely on their pragmatism, assumptions, and tacit knowledge in guiding their use of technology in teaching. For some, it was more important to be visibly affiliated with the bottom-up driven culture of technology than to be guided by policy or empirical research. Participants described a philosophy of 'technology is the way we do things around here' as a key influence over the determining of practice.

Practice is the central theme of this first findings chapter. It focuses on the individuals understanding of technology use in practice, exploring the development of practice, and highlighting influences on practice. The chapter that follows describes the findings as they relate to the consideration of the wider social space in which technology practice was situated. It considers the participants' perspectives on the roles played by students and management in the adoption and ongoing use of technology. Technology is subsequently highlighted as a site of struggle as sub-themes of control, emotional impact, and domination are explored.

In progressing through these findings, the reader may note a lack of distinction between various academic disciplines and 'territories' with regard to the uses and experiences of technology. Trowler et al. (2012, p.1) posits that the knowledge structures of academia 'strongly condition or even determine the behaviour and values of academics, who live in disciplinary tribes with common sets of practices'. While academic 'tribes and territories' may influence academic technology practice in some settings (Schneckenberg, 2009; Gordon and Brayshaw, 2014; Oliver, 2012), the data from this study did not highlight significant differences in technology practice or experience across disciplines. As will be highlighted, differences were noted with respect to the support and resourcing of technology in some discipline areas, but the differences between the varying academic disciplines were otherwise negligible.

5.2. Transitions in practice

The first guiding research question sought an understanding of how and if educational technology had influenced the practice of these academics. This constituted an enquiry into the 'state-of-the-actual' (Selwyn, 2010), an effort to understand the degree to which technology was being used by the participants in their educational settings. As we shall now see, technology was linked to a process of gradual change which affected both what academics did in the classroom and the spaces in which practice was conducted.

5.2.1. Gradualism over revolution

Time plays an important role in the work of Bourdieu (Atkinson, 2019). For Bourdieu, temporality is an axiomatic facet of practice (Jenkins, 2006), a social action which cannot be understood in the absence of a consideration of time. As discussed in chapter 3, time and history also play a key role in the formation of habitus, with dispositions shaped by past experiences. Thus an exploration of practice with a view to understanding habitus sought to comprehend the role of time in the alterations of practice and the shaping of technology use. When asked about changes to their practice in the context of time, several of the participants reflected on the changing nature of the technologies used within the teaching setting. Ben, Gail, Duncan, Audrey and Fiona contrasted their earliest use of technology in the classroom against their current utilisation of digital technologies. In some instances, the acetate was the earliest experience of 'technology' use in the teaching space:

> *Um, well like my first lectures here were on acetates. And that's 18 years ago.* (Fiona)

> *If I think back in the old days, when I started off, I first started lecturing in, oh Lord, let me think, 1991, '92, in that case then. In those days, there was a huge amount of attention brought into preparing acetates. Do you remember those?* (Ben)

For these participants, technological change has occurred over an extended period of time, as they have transitioned away from early technologies such as the overhead projector towards the set of contemporary digital technologies we see in use today. Change was seen as a gradual process:

> *Very gradual, over I'd say about the last 6, 7, 8, years, something like that, I can't even remember.* (Donal)

When change was reflected upon across the totality of a teaching career, the extent of change to practice appeared dramatic and substantial. This was particularly true for those in mid and late stages of their academic career. Fiona, Ben, Audrey, Duncan, Donal all noted change from their earliest days in teaching. Ben describes the change as dramatic:

> *You look at another extreme now, where you're actually producing videos and you're using multiple choice questions, MCQs, you're getting kids to submit online journals. It's a dramatic change. That's over a period of what, 1991 to the current moment…*(Ben)

During the course of the interviews, it quickly became evident that many of the participants had failed to engage in any form of meaningful prior reflection on the role of technology in influencing practice change:

> *I don't know. I suppose I'm conscious of the fact that I can sit down and reflect but it's only when I was actually given the question that I start to think about it. Then that induced reflection. So, have I reflected on it? Not really, no.* (Ben)

Peter and Gail attributed this lack of prior reflexivity among academics to the pervasive nature of technology:

> *You know when you think though, you wouldn't consider that a technology because almost those things are becoming so ubiquitous in your practice that that's part of how you deliver it. It's not seen as an extra.* (Gail)

> *I think it's probably a couple of things. One is that they haven't, I suppose, changed their practice. The other thing is that they're using those tools and it's just become so normal to them that they don't, as you say, reflect on it and see that it has changed.* (Peter)

5.2.2. Changes in how we do things

For Bourdieu, agents are guided by two epistemological types, a reflexive relation to one's own practice within a field and a 'practical sense' or a 'logic of practice' which might guide decision making and practice (Webb et al., 2010, p.49). While the data did not highlight evidence of widespread reflexivity with regard to technology use, participants described various 'practical senses' or a 'logics of practice' which guided the integration of technology into long standing teaching practices. The most notable of these were the beliefs and logics which underpinned the use of technology in face-to-face teaching. The participants held a common belief that educational technology enhanced the traditional face-to-face teaching experience. This belief was augmented by a strong critique of the participants' own traditional teaching practices, which they perceived as being outdated and in need of change:

> *I just know there's new ways. Of course, there are new ways of teaching out there, rather than me just standing there with my 15 slides or something like that.* (Megan)

> *You know, this flipped classroom, whatever they want to call it. Like who needs to hear me talking for two hours? Pretty much nobody.* (Kate)

> *We all know that we've actually got to change. The chalk and talk and standing up in front of people actually is just not going to work in the future*. (Ben)

> *I've just questioned the value of standing up for 45 minutes, or 50 minutes, and talking to a group of students. To me, it's almost a complete waste of time, right? So my use of technology has really come from that, okay?* (Donal)

Particular credence was attributed to technology's role in the enablement of the 'flipped classroom' pedagogical approach. Peter believed that his students' engagement with educational technology prior to scheduled classroom sessions had increased the value of in-class face-to-face interactions:

> *I guess that's what's really changed, that the classroom time was used previously to deliver the material, the content, whereas with digital technology, I don't necessarily have to do that anymore because I have very extensive learning objects that I say, "Interact with that. Interact with that, and that." It frees up face to face time for a much more valuable session. I think that's been the real impact of it.* (Peter)

Duncan, Donal, Kate, Ben, Audrey, and Megan all provided examples of utilising technology to 'flip' the learning experience. Like Peter, they believed that this new technology-enabled pedagogy offered a superior alternative to their previous approaches to teaching. The combination of a new pedagogy with technology was credited with an increase in student interest, interaction and engagement:

> *Dissemination of information, dissemination of lectures, sometimes I'll actually do flip lectures and what I'll do is in terms of, with a particular topic, I'll create a video about it, audio about it. The students have got to*

look at the video and audio before I deliver the lecture, and then I'll use the lecture to actually leverage that. (Ben)

Where if you say just watch this 15-minute video before you come in, most of them can do that on their phones because it fits in with their life I suppose, you know. Then the class is much more interactive. (Duncan)

Because we're no longer just standing up there pontificating……I think it's made it more interesting. (Audrey)

Student experiences outside of the classroom were also seen to be positively impacted through changes in participants approaches to assessment and feedback resulting from their utilisation of technology. Assessment through technology was considered to be a normative form of practice. Gail, Megan, Leo, Barry, Julia, Dorothy, Ciaran and Kate, all provide examples of how assessment through technology is considered to be the norm:

It's just part of how you do day-to-day work. Now, it's very rare that I ever have a paper-based assignment. It's all through Moodle. It's all corrected through Moodle, feedback is through Moodle, and that would be across the board. (Gail)

Gained efficiencies and improvements in assessment-related workloads were highlighted as contributing factors in the adoption of technology. The use of rubrics, feedback tools and automated quiz grading were perceived as being highly beneficial:

You can click, click, click boom, and it goes, has made it so that you can, in my view, choose the assessments that's right for the student in the context of other constraints (Dorothy)

I had marking on Moodle where you could actually just do the feedback automatic, and it was all there. (Megan)

Technology was also credited with the enablement of new and innovative forms of assessment. Both Leo and Barry had experimented with video-based assessments whereby students could record activity on smartphones or other devices, before subsequently submitting video files for evaluation:

So, we use the video rather than getting them to write out an essay on it individually. That we were able to film them as a group with their consent and then we can look at the assessment that way. It helps us in assessing the actual work. (Leo)

...So, they have a bot or something and they have to write code to get it to do something. As part of the submission they will submit their code. That's fine. But then I would have to download the code and test it to make sure and that was painful! So, I get them to...they have to produce a video. (Barry)

Educational technology was used extensively for the creation and dissemination of supplementary learning materials. Reusable learning objects (RLO's) were seen as being significantly advantageous from a teaching and workload perspective. For Peter, these had 'completely changed' his approach to teaching:

It's completely changed. I suppose when I came in first, I took a very traditional approach to teaching, that I am the lecturer, I stand up when I deliver the material to you and you consume it. Then you prove at some point later on that you got it. It's totally changed that because I'm now able to, in advance, prepare reusable ... I think that's one of the key things. The technology allows you to do reusable learning objects. (Peter)

Instructional video was a key form of reusable learning object for Fiona, Gail, Ben, Barry, Irene, Audrey, Donal, Duncan, Peter and Ciaran. All made use of instructional video as an added value component of the educational experience:

> *It's a simple thing but just instructional videos and my students love them, and they come back to me and I started doing it... and "gosh, that's brilliant." And they can watch it in their own time and "gosh, if we'd more of those videos, we'd learn so much more."* (Barry)

> *So, my teaching style now is that everything I do, all my material, is available on video format for the students. Right? And what I say to them is, "Look at the videos whenever you feel like it and then come and talk to me about the material."* (Donal)

Many of the examples provided by the participants were also evidenced in the institute's annual reports on 'teaching and learning innovations', which were produced between 2010 and 2013. These reports contained accounts of innovations in teaching and learning written by forty-nine academics at the site of study. Six of the contributions were written by participants in this study. Of seventy-nine submitted case studies, fifty-five featured technology as the key focus or enabler of the innovation. These documents provided a useful second source for examining the gradual and ongoing integration of technology into academic practice and a culture of associating technology with pedagogic change and innovation.

5.2.3. Transitions into new spaces

The study of practice should also consider space as both a constraint and influence on practice. Practice in the Bourdieusian sense, viewed as a "visible, 'objective', social phenomenon" cannot be understood outside of space (Jenkins, 2006, p.42). In articulating their own understandings of technological practice, many of the participants referred to the spaces in which technological practice was actualised. For Julia, Donal, Peter, Dorothy, Ciaran, Kate, Gail, Barry and Irene, the growing demand for flexible and online education had necessitated varying degrees of changes in their practice space, moving from the familiarity of the lecture hall and classroom to the strangeness of the online teaching space. In describing their respective transitions into online teaching, these participants frequently drew comparisons between traditional teaching and online teaching spaces. Audrey summed up the recognition of a need for an altered pedagogic approach for online teaching:

> *I mean okay, what they're taught to do is how to use Adobe Connect, which is only the tools, so to me that's like taking monkeys who climb rope, here's the tool, here's how you use the tool, this is the button you press, this is what you do. But online learning, to me, is not the same as classroom learning* (Audrey)

While the need for an altered pedagogy was acknowledged, there was a sense that this change was constrained by the design of online teaching technologies which aim to impose the pedagogy of the classroom in the online space:

> *Oh, we have an internet-based course. But that's not using technology in a productive way or changing your teaching style or methods. That's just giving a lecture over a microphone, but it's not changing the way that you interact with the students.* (Donal)

Peter's first approach to teaching with virtual classroom technology relied on the pedagogy of the physical space. He quickly appreciated the shortcomings of his intended approach:

> *The first time, I'll be honest, the first time I did it, I took a set of lecture slides that I delivered during the day and I just did it. It was a radio broadcast. It's very unfulfilling.* (Peter)

Other participants expressed similar concerns and sentiments of disappointment with their transitions to the online teaching space. Paul, Dorothy, Gail, and Julia noted the altered nature of interactions between academics and students in the online classroom. A key difference highlighted between face-to-face and online teaching was the loss of immediacy in the online space, and in particular, the loss of verbal and non-verbal cues which were so often relied upon during the course of face-to-face teaching:

> *You can't just take your face-to-face interactions and replicate it online, it doesn't work. It's a completely different environment, and a lot of it is in the face to face, it's in that name that you can see their faces, so there's a constant feedback in terms of what and how they're digesting the material that you're presenting to them. So you can adjust your teaching. You can kind of bring the class along in a face-to-face session, with new material and so on, that's delivered in the classroom a good bit more than in an online environment, because you can moderate your pace and so on, because you can see what's happening. You can't do that in an online environment.* (Paul)

Dorothy, Gail, Julia, and Barry, noted the difficulty of adjusting to an online teaching space which does not afford the academic the opportunity to easily measure the 'feel' of a room, a tacit skill that might normally allow them to alter the flow of a teaching session:

> *You can get a sense of the emotions in the room and it's very difficult to get the equivalent sense online. It's very, very difficult to get that sense online* (Dorothy)

> *It's been hard to check in with students and say, "How are you getting on? At what point are you at? What are you getting from the module? What questions do you have?"* (Gail)

> *So I do think face to face, you have the opportunity to watch people struggle, you'd see them in the room in front of you, tutorials, you'd see them.* (Julia)

> *You just get a much faster reaction time face-to-face with a class and you can direction and go, "Oh, right, I was going to do this but, oh yeah, I see you're not getting it. Let's go and do this instead."* (Barry)

The loss of immediacy in the online teaching space was linked to a feeling of disconnect between the academic and the students. For Ciaran, it has taken several years to adjust to this new disconnecting space:

> *I'm nearly ten years in, but I remember the first couple of years and talking to a screen is a strange, strange thing to do. And you're talking, but you get a bit of interaction along the side bar but.... you're sitting there talking to a screen in an empty room. It takes a bit of getting used to.* (Ciaran)

Others continued to struggle with the transition, noting their ongoing sense of isolation within the teaching experience. Participants who had become accustomed to the immediate, interpersonal and social nature of the busy lecture hall, expressed unease and dissatisfaction with the online teaching experience:

> *You're talking into a bloody microphone for an hour or something, and nobody is listening, you know?* (Donal)

> *Like I said, it's very disconnecting, I think. It's just you don't know ... It's almost that you're just putting this information up into the ether....* (Gail)

.... but my colleagues sometimes deliver content online because they don't have a choice and sometimes they get a sense that they're speaking to the abyss. (Dorothy)

It kind of started because of the online delivery and having to get away from talking into the darkness and trying to find a more engaging and interesting way of doing it. (Kate)

Ben felt that students also missed out due to the immediacy barrier. He felt that the 'thespian' nature of the academic performance in the physical space was lost during online delivery:

If you look at the delivery in a lecturer, of how you deliver material, of where you bring in your body language, the tone of your voice, you dramatise things, you leverage things purely in terms of body language, in that case then. And you look at how we deliver for something like over Adobe Connect, where you've stripped out all the personality and you've stripped out all the body language and you just have your PowerPoint slides, and you talk monotonously for probably two hours at a go. That's horrendous. (Ben)

Barry, Irene and Julia all commented on the increased preparation time for an online teaching session. This was attributed to lowered levels of student interaction in the online teaching space. The time which may have been set aside for face-to-face interactions was replaced by additional learning material in order to avoid the potential embarrassment of running out of things to say during scheduled sessions:

There's a lot more preparation that goes into it. You're aware of delivering a Webinar, if I was in the classroom for an hour, my five slides would do me for an hour. I'm delivering a webinar; I need a lot more slides. And I *remember another lecturer doing her first webinar, and commenting, going, "Jesus Christ, Julia. I ran out of material!"* (Julia)

The lack of immediacy, changing interactions in the learning experience, and a change in the very nature of the relationship between student and academic, had led to an acknowledgement of a need for change:

...if the online lecture falls in the woods, like if no one is actually there or engaged or if they're all making tea, does that actually land, does the point land at all? And I think that's kind of problematic. (Dorothy)

In Kate's case, the need for a pedagogic change was communicated and agreed with her online students:

...you know, this idea that you can recreate the classroom environment online is nonsensical. I have another class at the moment that I've been doing online with, and like we all say it, because they're again they are a level 8 class. And we're sitting there saying, "this is just about the worst way to deliver this". And I said to them," I will never do this again because it's awful, and I'm gonna completely change it", because literally it's what I call a podcast. Where you're just literally speaking, and you're saying, is everybody with me, and after a few seconds somebody goes, "Yes," because they've just woken up at the other end. Do you know what I mean? And it's dreadful. (Kate)

Peter, Dorothy, Gail and Megan all provided examples of an adjustment to pedagogy in response to the inadequacies of traditional approaches. The social nature of learning and the importance of face-to-face interaction had resulted in a preference for blended delivery as opposed to pure online delivery:

So, I think that's the challenge for online teaching, that I don't think it's ... 100% online is not ideal, I think, because we're humans, so you need that blend between some kind of face-to-face interactions or at least face-to-face interactions not with the lecturer, but at least with their peers. (Peter)

From what I've done with it, I think I favour a blended approach... (Gail)

We're beginning to do blended now. We had a bit of a nightmare trying to set that up with the first, I think. I can't remember what happened. It was different problems trying to do webinars, but we've just started that now, yeah, this year. (Megan)

The flipped classroom approach which had gained popularity in the face-to-face space, had also been adopted in the online space as a mechanism for driving online student interaction and breaking down the immediacy barrier:

So, I kind of quickly decided that actually my online sessions were going to be my interactive, kind of almost workshop type sessions, where they were going to be doing activities and talking to me in the class, about the activities. (Dorothy)

So, what I think you need to do then, is you need to provide all the material in advance that they consume, and then they come to you and you kind of leave it wide open and say, "Well, you tell me what this session is about. You tell me where you had problems because I don't know where you're having problems or whether or not you're able to consume the material." (Peter)

5.2.4. *Technology as a catalyst for change*

A common understanding regarding the impact of educational technology on teaching practice was developed between the researcher and the participants through the collaborative exploration of examples of use and reflections on experience. Ben, Kate, Barry, Irene, Audrey, Donal, Duncan, Julia and Peter felt strongly that technology was a contributing factor in their changing practice and put forward several examples of change. Fiona, Leo and Ciaran did not definitively state that their practice had changed but did provide significant evidence of technology use within their practice. Interestingly, while reflecting on change, Ciaran became critical of the constrained nature of the academic timetable, whereby academics are encouraged to teach in designated blocks of face-to-face lectures or tutorials, allowing for little variation in practice outside of those modes of delivery:

> *Not a lot. The interaction's the same, the lectures. Should it change practice? But still at the end of the day I guess, maybe it's me just not moving. It's hard, you're still......the fact is that this is what you're paid to do, and you're paid, our schedules at the moment are to be standing in the classroom for two hours.* (Ciaran)

Only Megan and Dorothy responded in a negative manner when asked if their practice had changed as a result of educational technology. While Megan provided examples of her use of the virtual learning environment and online assessment, she did not feel that these represented an adequate level of adoption or change:

> *Yeah, that's a bit scary when you say that because I don't know that a huge part has, for me. Has a huge part changed? No. Yeah, no, it hasn't. Really. It should do when you think about it, but no, it hasn't.* (Megan)

Dorothy believed that technology had 'facilitated her practice' but did not believe that her practice had changed as a result of technology:

Has It changed my practice? Probably no because I was doing the feedback anyway. Has it changed my life? Yes, because I've now more time to devote to developing new content or doing my own research, that you've got pushed off the to do list beforehand because I was standing on a photocopier or handwriting out the same comments over and over again. (Dorothy)

5.3. Informing practice

Although not part of the planned interview protocol, many of the conversations provided insights into how these academics learned about educational technology. In examining the technology practices of a field, we may note that the logics and norms of technology practice are conditioned by the surrounding social space (Sterne, 2003) with the understandings and knowledge shared between actors playing a key role in the development normative practices:

...all individual practice and the understandings which inform that practice are always social; they are always learnt from others and performed in reference to others, requiring the understanding of other individuals, even if a particular individual might reject and ignore that interpretation.

(King, 2000, p.431)

At the outset of the study, I had assumed that the majority of academic knowledge relating to the use of technology had been acquired through formal training opportunities. While participants provided examples of engagements with a variety of institutional training initiatives, there was an acknowledgement that time was a significant barrier to engaging in formal training:

It's a fight carving out the time for training (Fiona)

I know different training courses have many different ways of doing assignments. I would love if I had the space to actually do that and try it out. (Megan)

And see, there isn't time for training here (Audrey)

As a result, levels of academic engagement in structured training often fell short of expected demand. Dorothy recalled one poorly attended session that helped her transform her practice:

I went to Moodle for assessment training workshop a couple of years ago that wasn't particularly well attended. And at the time it was a huge revelation for me… (Dorothy)

This apparent lack of engagement by peers may be explained by a desire for 'just in time' training:

I think by its nature you need to learn as you go (Irene)

It's on, at a time, you might organise four of them and you just can't to get to them on that particular week… And it's only really when you need to do something. (Audrey)

The inability to fully leverage scheduled training opportunities had meant that these participants have relied on a variety of other forms of learning about educational technology. Identified forms of learning were broadly divided into three categories; 1: learning from peers; 2: learning through experimentation, and 3: learning from other examples of use.

5.3.1. Peer Knowledge and a culture of sharing

Participants spoke of a culture of information and practice sharing as it related to educational technology. Gail, Megan, Barry, Julia, Audrey, Duncan, Dorothy, and Kate cited examples of developing their practice through interactions with colleagues. Best practice and examples of educational technology use were widely disseminated through a 'word of mouth' culture which existed within the academy:

> *...so it's sort of word of mouth, and local knowledge sharing is a big driver in people embracing technology if they're up for it, and if they're interested. I think most people are.* (Duncan)

While this peer-to-peer form of practice dissemination was deemed useful by participants, it also appeared to be problematic. The participants cited no examples of cross-discipline sharing, and in the main, it appeared that much of the learning occurred within the silos of existing disciplines:

> *It does happen in pockets and sites. As a result, people tend to stand back and say "Well look, gosh they're doing well. I would love to have done that."* (Ben)

In some cases, knowledge sharing was dependent on the exteriorisation of individual activity and success, allowing for questions and dialogue amongst peers:

> *I've kind of found myself kind of going, "I didn't know you could do that, God, where did you get that from?" Or, "How are you doing that?" Or, "That's very interesting."* (Audrey)

Peer cooperation in this culture of practice and knowledge sharing was not a given, and several examples were provided of peers not engaging in the sharing of knowledge. Time was a common reason given by those unable to share:

> *Some will quite happily share it, like I said. Others won't share it for a number of different reasons. Predominantly because they don't have the time*. (Ben)

The issue of a single source of knowledge became problematic when one person was expected to support the knowledge needs of many peers:

> *And nobody has the kind of time to do it. Like I know [colleagues name] is doing some stuff on the classroom ... Global classroom, and I think that's an absolutely incredible sort of initiative, but that's one person doing something!* (Audrey)

> *They did a global classroom, they thought it was interesting, told someone else, and then they did it, but if these things go to scale, that one lecturer can't, on their own goodwill, support everybody to use these things*. (Gail)

Ciaran felt that our culture of knowledge sharing could be enhanced through a more structured and formalised knowledge sharing approach:

> *Is it like, if you try something that works for you, do you tell us about it? Or do we have meetings where we push technology among ourselves or say, "let's try this" or have a department meeting where "I'm doing this," or "I'm doing that" where we share information?* (Ciaran)

Despite perceived shortcomings, there was a general belief that the culture of learning from peers was beneficial and had facilitated practice change. Gail felt that she had benefitted from her colleagues' demonstrations of a paperless feedback and assessment workflow within the Moodle virtual learning environment:

> *So sometimes, it's a question of sitting down if you happen to be in a conversation, someone said, "Oh aye, so-and-so, can you show me how to do it?" I think it comes out sometimes through an informal discussion that somebody shows you how to do it or how to set it up and then you think, "Oh, I like this. I'm not carrying around bits of paper with me. (Gail)*

Julia learned about the possibilities of online assessment and grading from conversations with peers. This prompted her to engage with a formalised training workshop run by the institution:

> *And then talking to other colleagues who were using it, and recommending it, and saying, "Look, it's great. You can put feedback up on it, assessments and ..." So then I did the training, and once I did that, and then this whole programme was just opened up totally, yeah.* (Julia)

Some academic departments had initiated a peer mentoring system for new members of academic staff. As part of the process, peer guidance on the institute's educational technology platforms was provided to new academic members of staff:

> *I am conscious that I'm a mentor for someone at the moment, a new member of staff, who's kind of older and finds technology absolutely terrifying.* (Dorothy).

5.3.2. Experimentation, playfulness and self-learning

Self-learning and learning through experimentation were also cited as important ways of developing a knowledge of educational technology. Donal, who had engaged with some published research as a form of learning, believed that most of his knowledge had been developed through self-learning:

> *But in terms of actually learning the technology myself, finding how to do it and how to get it up right, and how to make the quality ... that was really mostly self-learning. I'd say 80% of that was self-learning.* (Donal)

Donal admitted to 'learning on the go' and using his own sense of things and student feedback as a barometer of success:

> *No, to be honest I'm going by the seat of my pants right, I'm going on the basis of my own experience with students and as a lecturer, and I'm seeing what the students are saying to me, and whether they like the material and do they like how I've been providing, do you like interacting the way that the material forces you do to.* (Donal)

Donal was not alone in this approach. Other academics had found themselves engaged in experimentation through circumstance. Dorothy recounted a time that she was assigned a module that required online delivery. She felt that she had little time to prepare adequately, and as a result, she found herself relying on a combination of research and learning 'on the fly':

> *Like it was a new module that's taken on and so I had no kind of ... I hadn't taught it before and then all of a sudden it was coming online but yeah; it was probably a bit of a surprise and I probably was a bit reluctant. I was like, no, we keep an open mind and then we'll try this, and we'll do different things and do a bit of reading and give it a go.* (Dorothy)

Kate was asked to coordinate and teach on an online programme and, like Dorothy, had little experience in online delivery. A lack of timely support and accessible knowledge impacted her approach:

I think it's an absence of knowledge, do you know what I'm saying to you? So, we're learning on the hoof all the time. So, we don't have a champion who's done all this before. (Kate)

In other instances, experimentation with educational technology had been prompted by the newness of the technology or the opportunity for the novel application of technology in an educational context:

Probably the point I'm actually trying to get at is that I've always actually had to learn how to use the technology itself, because it hasn't been established. So, it's all been at the leading edge. (Ben)

While there was a degree of frustration expressed about this form of learning, there was also a definite sense from the participants that enjoyment could be gained through experimentation in technology use. Ben cited this as a key driver for his experimental approach:

I think it's an intrinsic driver, actually, because I would tend to look around and see what's actually out there and say, "Oh, that's something new. I'm getting bored with the old stuff and I'm using this to see what actually happens." (Ben)

While Duncan described his enthusiasm and sense of excitement regarding technology use:

I feel enthused and excited, and the more I ... I would describe myself as somebody who has an insatiable appetite for using technology (Duncan)

Donal described a dual benefit of experimenting with different technologies. He believed that both the academic and the student benefit from the experimental approach:

> *Well, I enjoy using it, I enjoy developing my materials using different technologies. Maybe it's not for everybody. But the reason I do it is twofold, so the student can benefit and so I can enjoy it.* (Donal)

Despite her sense of unease around learning through experimentation, Dorothy was proud of some of her outputs and took particular pride and delight at the aesthetic of her online module:

> *I think we get sucked into it a little bit in that......I do it myself. I take great pride in my Moodle pages. Like they're so pretty!! [laughs]* (Dorothy)

It should be noted that not all of the participant experiments with technology were adjudged to be successful. While success following experimentation may provide intrinsic rewards, failures, particularly those that impacted the students, resulted in a sense of frustration. A more detailed account of failures and frustrations relating to educational technology is provided in the following chapter.

5.3.3. Looking to the outside world

Knowledge of educational technology was also acquired through engagement with other examples of use which provided new and valuable perspectives. Donal and Ben gave examples of taking part in training programmes run by other higher education institutions:

> *That was actually driven by a training programme I did about four or five years ago. I said that's actually quite interesting, I must have a look at that*

because I was actually getting bored just doing the chalk or talk job. I said, "There must be a different way of actually doing it." (Ben)

The DIT learning LTTC, they're very good, I did a course I think between them and DCU, and yeah, they're very good. They wake you up to the possibilities, you know. (Donal)

As with the culture of learning from peers, Barry found that observing the practice of academics working outside of the institution was a useful influence on his approach to educational technology:

I just did it myself. I looked at what other people were doing. There's [named academic] in [named university]. He has a great channel and he has loads of good... and it's all exactly the same. I was doing [module topic] and I was getting into that and he had a whole suite of stuff up on that and then just through some of the things he said that I was listening to and I was sort of coping on to what he was using, and I said "Alright, he's using the Logitech C920 camera. Okay, I'll get me one of them." So just sort of bits and pieces. Just sort of pulled it together like that. (Barry)

Peter, Gail, Audrey and Duncan all saw the value in engagement in educational technology conferences which afforded opportunities to learn about other examples of use:

I was, at the UD Heit there, using things like functionality in Word, and Google to deliver classes. People experiment, and you see them say, "I like that idea." (Duncan)

I went to a one-day conference on e-portfolios. I remember it was last September. Again, because I was able to, it was a free conference on a Friday, close to where I lived. Great! (Gail)

The external drivers are really when people proactively go and interact with conferences, teaching learning-based conferences and so on, and they see the benefits of technology in the classroom. (Peter)

Conference attendance was also deemed useful. For Audrey, her repeated engagement in educational technology conferences such as EdTech[8] promoted critical questions with regard to the wider issues of technology strategy and the lack of standardised workload models for academic staff:

I went to an awful lot of those kind of conferences. And all I kept thinking was, "Where's the strategy? Where's the recognition for the time this is going to take to produce?" And there is no recognition! (Audrey)

There was also some acknowledgement of the usefulness of workshops and other voices. Dorothy spoke of the value of an externally facilitated workshop which aimed to address ongoing issues around online assessment:

So, we are having an online delivery assessment workshop this week where the course coordinator has kind of identified someone to come in and help us kind of work through your training in that sense and kind of think about what we're doing on how we're conceptualising online delivery and how we're conceptualising assessment in that sense. (Dorothy)

For Kate and Gail, speakers from outside of the discipline provided valuable insight and a sounding board to address pedagogical concerns regarding their new online degree:

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[8] Etech is an educational technology conference run annually by the Irish Learning Technology Association (ILTA). See http://ilta.ie/edtech-conferences/

So, none of that is achieving any of the pedagogical aims, or anything for me that we wanted out of this. So that's why we actually had an online curriculum design workshop there with [speakers names] last week. (Kate)

The speaker came in and he kinda talked about ideas that you could use. He said, "Maybe instead of going through the CA in a webinar," he said, "Maybe you could do a podcast of your CA and upload that," so people can listen to it wherever. (Gail)

5.4. Influencing practice

In arguing for the relevance of Bourdieusian theory for the study of technology, Sterne (2003) makes an important link between practice, technology, and the structuring influence of society:

> *Because technologies do not have an existence independent of social practice, they cannot be studied in isolation from society or from one another. They are embodied in lived practice through habitus, and so even the most basic 'phenomenological' aspects of technological practice and experience are themselves parts of the habitus.*
>
> (Sterne, 2003, p.385)

Academic technology practice is therefore understood as being both individually and socially constituted. With this in mind, participants were asked to reflect on the influences of the social space, with particular heed paid to the perceived influences of policy, strategy, academic knowledge, and discourse. In seeking to understand these influences, the study sought further insight into the rationale and beliefs which are used to develop and support the logics of technology practice.

5.4.1. The influence of institutional policy and strategy

During the course of the interviews, the participants were asked to reflect on their knowledge of strategy and policy, with particular attention given to their power of influence over individual practice and decision making. Institutional policy was described to the participants as a form of documented policy regarding the use of educational technology that originated from within the institution. Many participants assumed the existence of an institutional policy on educational technology, but none could identify a definite policy source:

> *I'm sure there are. I'm sure there's supposed to be support, and promoting staff, and encouraging staff in any way, but I don't know one [laughs].* (Megan)

> *You know what, I'd say there is, but I'd say I probably didn't read them.* (Kate)

Others had not sought out a policy and, as a result, were less certain of its existence:

> *I'm guessing no...I have not looked at the DMS, but I'm guessing no.* (Dorothy)

> *I don't know because I haven't seen it. Is there? [laughs]* (Ben)

Interestingly, an analysis of the institutes policy documents did not uncover any policies which dealt specifically with the topic of educational technology and its use in the context of academic practice. While the institute has a range of policies which guide academic approaches to teaching, assessment, supervision and quality assurance, the topic of educational technology is largely absent from these policies.

While there was a high degree of uncertainty regarding the existence of an educational technology policy in the institute, the participants were more certain about the existence of other academic policies of the institute, exhibiting a particular knowledge of policies related to academic governance and compliance. For some participants, the importance of educational technology policy as an influencing force on individual academic practice was downplayed, with policy only deemed relevant in the context of compliance:

> *How much of what we do is impacted by policy, and research? I don't know. I'd say very little. Policy is, unless it's some sort of GDPR, or something that I have to comply with, it's not for me.* (Duncan)

> *Yeah, if they were there and I was being told they were there and I should look at them, absolutely. Yeah, I would try to follow the rules and get some guidelines, get some help out of it. Yeah, absolutely.* (Barry)

> *I don't. I'm presuming they're there, it's not something that would hook me in. I just kinda would respond and do what I'm told in terms of that.* (Fiona)

The prioritisation of policies of compliance was highlighted when several of the participants linked the recently enacted General Data Protection Regulation (GDPR) legislation[9] to our discussions on educational technology policy. Knowledge of the legal frameworks which govern the data produced by and stored within educational technology platforms appeared to be important to many of the participants:

> *Now, policy ... I'm trying to think of the, we have ... the key policy documents and strategies, that's one anyway, general data protection, and I think it's very, very relevant across the board.* (Leo)

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[9] The General Data Protection Regulations (GDPR) came into effect in Ireland and all participating EU member states on the 25th of May 2018.

The other one is the whole thing around GDPR. So particularly say our degree and the [discipline name] degree, we're videoing people. We've all this digital content, we've photographs, we've tonnes of stuff. And we're going, "what's the story here now, what's the policy here, how are we going to be doing it?" (Kate)

...it was GDPR training, and Moodle is very helpful in the context of GDPR......particularly for say returning marks and stuff like that. (Dorothy)

An analysis of the institutes documentation revealed a strong focus on policies of compliance. By way of an example, the topic of data protection was addressed in a range of policy and guidelines documents which included separate policies on data protection, record retention, compliance, child protection and welfare, and research ethics. Other policies of compliance covered topics such as exam paper authoring, external examiner communications, course board policies, operational guidelines, and quality assurance procedures.

For some academics, the over-concentration on policies of compliance was problematic, particularly in the absence of a meaningful educational technology policy. The absence of recognised policy or best practice guidelines seemed to result in a degree of unease with regard to the individual adoption of educational technology:

GDPR comes in on that, as well. That is a policy in terms of the data about students and how they interact with digital tools, but the adoption of particular technology in classroom, as far as I'm aware, there's no clear guidelines. (Peter)

That's one of those things that's really worrying. Because to me there is no control. There is no process, procedure, policy that we can all comfortably say this is allowed, this is not allowed, this is done, this is not done. (Kate)

Both Kate and Peter highlighted particular concerns regarding the student experience, which may be negatively impacted by a lack of policy:

You know, we've never had the case the student has stood up and said, "My education in a particular module has been ... or the use of this technology has been detrimental to my grade here." They could challenge that, and say, "Well, I'm gonna take a legal case because ... ". And nobody's monitoring who's using what in the class. (Peter)

And so, I just have this feeling, you know, that one of these days you could get a particular student might come along and start to challenge around things like that. And the pity of that would be if we haven't anticipated and kind of got a policy that anticipates that, is that then it'll shut everything down. (Kate)

The absence of an institutional educational technology policy was viewed as a failure of management to enable sought after practice change across the academy (see the following findings chapter which describes academic perspectives on management). Perceived shortcomings were highlighted with respect to the development of strategy and the enactment of related policy. Both Ben and Duncan criticised a lack of implementation to match strategic intent:

There's probably policy development in it, but planning and implementation, I haven't seen any experience of that. (Ben)

I think unless there is a defined policy in relation to the use of technology for education, right, it's all just hit and miss stuff. It is, if there's a defined

> *policy, with a defined set of materials that can be used in a way of teaching people to use it, and you provide time for people to learn and then develop the materials, that's never going to be done here.* (Donal)

Barry attributed this to a lack of leadership with specific responsibility for the implementation of technology policy:

> *I think it's because that there's nobody in charge. There's nobody whose one sole role is the promotion, not just promotion, and the implementation. They have to be hands-on involved in the actual doing of it and support people who are doing it as well. (Barry)*

Ciaran pointed to a bottom-up culture of educational technology use which may explain the lack of top-down policy and direction:

> *I think it's gone the other way around. I think the lecturers are driving it as opposed to the institute. I think the institute is following the lecturers.* (Ciaran)

During our conversations on policy, participants repeatedly shared their insights into the strategic intent of the institution. The uncertainty regarding individual knowledge of policy was replaced with a greater degree of certainty regarding the institution's strategic goals as they related to technology. One such strategic goal highlighted by the participants was the concept of the ‘digital campus’, a strategic pillar of the institute’s joint application for technological university status[10]. Fiona, Donal, Gail, Kate, Ciaran, Duncan, Peter, Leo, Audrey

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[10] In 2018, the Dublin Institute of Technology (DIT), Institute of Technology, Blanchardstown (ITB) and Institute of Technology, Tallaght (ITT) formally applied for designation as a Technological University following the publication of the Technological Universities Act 2018.

and Barry all showed an awareness of the 'digital campus' concept and its status as a strategic goal of the institution:

> *…we talk about the digital campus, and we're going to become the preeminent university for digitalization* (Donal)

> *And I guess that's the digital campus, that the TU has defined as the need for using digital tools in everything we do.* (Peter)

> *Because one of the stated policies of the TU Dublin, is to use technology to leverage what they can actually do. But yet, we haven't articulated a policy in terms of how to do that or even set ourselves goals, actually.* (Ben)

An analysis of the institute's strategy documents highlighted an increased level of focus on the role to be played by technology in shaping the future direction of the institute. The 2015 strategic plan (ITB, 2015, p.9) commits to an expansion of '…our innovative use of technology to further enhance the teaching and learning environment' while the 2018-2020 Digital Experience strategy (ITB, 2018) sets out a vision for the future of the digital campus concept. Much of the knowledge of these initiatives and other strategic objectives appeared to have originated from the internal discourses centred around educational technology and the new university's ethos. Questions remained as to how these strategic aspirations would be realised:

> *I think that sometimes maybe when you read in the strategy documents and now with the TU, we're going to be a digital campus and different kind of policy aspirations, sometimes you can think, "Well, how is that going to be realised?"* (Gail)

> *Strategy is just simply a plan. A plan in terms of where you actually want to get to, in that case. It's funny that we actually have articulated a series of objectives. We know where we want to get to, but we're just not 100% sure in terms of how we actually want to get there.* (Ben)

> *They have these kind of overarching strategies like we're going to go more digital, I mean we have this digital campus. But when you say to somebody, well what does that mean in nuts and bolts, that's not quite as clear.* (Kate)

There was some evidence that management had engaged with academics with regard to the co-development of strategy and policy. In general, these interactions appeared to have triggered a sense of frustration. Duncan felt that his efforts to contribute to strategy were ignored:

> *I raised this, I said, I thought there should be a strategic objective of the school, to teach the stuff, help produce material like this, as a strategic objective, that people would be at least at a minimum aware of what's possible, and embed it into their teaching and learning approaches. It just falls on dead ears, you know.* (Duncan)

While Audrey had become disillusioned at a dialogue process that appears to repeat and go nowhere:

> *And people, then, are just disillusioned here because they go to meetings about this and they come up with ideas, and get all fired up about it, and everything is great. And then nothing. And then six months later, we have a strategy meeting, and we all get fired up, and then you get to the point, and the older you get the more you go, "What's the point?"* (Audrey)

Structural changes and leadership (discussed in chapter 6) were repeatedly suggested as remedies to the gaps between policy and practice. The participants sought a clear articulation of vision combined with a plan of action:

> *Somebody needs to sit down and say "Well look, this is the vision for the future. This is how we actually want to do things." Look at the 'to be' state and then do a variable analysis with the 'as is' state and see how to get from one to the other. That requires a little bit of thinking and a little bit of planning.* (Ben)

> *I think maybe sometimes strategic plans are aspirational. Maybe you put down on paper where you want to be rather than where you are, but I suppose usually you have to have the 'how am I going to get there' in place* (Gail)

5.4.2. The influence of external policy and strategy

While there was a degree of uncertainty over institutional policies, participants demonstrated some awareness of an external policy environment and varying national and international sources of policy. Fiona, Megan and Duncan were typical of a number of participants who believed in the existence of a policy framework but who were unable to point towards definitive sources or examples of policy. The higher education authority (HEA) was frequently cited as one possible source of policy:

> *I supposed the HEA. I mean, the HEA would be key in terms of the framework that is put in place, and the service model of what it expects from the different institutes that it's managing. They would be a key stakeholder.* (Fiona)

> *I'm not aware of external policies, but I'm sure the higher education authority definitely have a whole policy on where digital technology is*

going in the next 10 years, 15 years. I'm sure there is a document somewhere, as to where they'd like to see it go. But I am not aware of it. (Megan)

I supposed the HEA. I mean, the HEA would be key in terms of the framework that is put in place, and the service model of what it expects from the different institutes that it's managing. They would be a key stakeholder. (Duncan)

The European Union and the National Forum were also highlighted as originators of educational technology policy and guidance:

There's advice and best practise, so I think the teaching learning forum *do a good job of that from what I can see. So, there's lot of research internationally that's successful out there. There seems to be policies in other jurisdictions.* (Peter)

There are policies coming out of Europe *which are pushing this, because of the gap, the huge skills gap in ICT skills, the skills gap in all different areas around digital.* (Kate)

There was some degree of acknowledgement by the participants that these external policy actors exerted influence over the strategic direction of higher education and the institute:

I'd say cost, I'd say policy, nationally, internationally. There's endless policy that would suggest that this is the way to go. And you know, coming back to your other question about managers and where they stand and.........they have to exist within that policy framework. So, I mean to some extent you can't fight city hall on it. It appears to be at a national *and international level have said that this is the way we're going, then to some extent we need to go in that direction.* (Dorothy)

The government, for starters. You get money for technology that you wouldn't get for other things, I think, and I think that's government policy oh were the 'E country' kind of thing. We have all these multi-nationals that are the E-people, so yes. You'll get money for that kind of thing, so I think it's probably optics for grant funding and that sort of thing. (Audrey)

And government are putting in place policies and schemes to encourage people to do more of this. And so realistically, it's kind of the tail wagging the dog. You know they're gonna just, institutions are funded by these kinds of things, so they're only going to go more towards that direction for sure. (Kate)

While external policy actors were seen to apply some influence over our institutional strategies, there was little to suggest that the participants recognised these outside actors as a direct influence on individual academic practice:

And externally, I know I should say there will be a drive at third levels. Embrace technologies and stuff. So, I'm aware of that, but it doesn't change me in any way, because it doesn't directly influence me at the minute. (Megan)

Indeed, participants exhibited little more than a passing knowledge of the work of some of these bodies. Ciaran, for example, was aware of the work of the National Forum for the Enhancement of Teaching and Learning in Higher Education (National Forum), but did not feel that its work influenced his individual practice:

I know what they do, but that's just because [colleague name] is obviously involved in National Forum for years, but that's the only reason I know. They collated a lot of good data on who's doing what in different colleges around the country. As in getting back to us, I don't know, maybe I'm wrong, but lectures tend to just, there's your hours, there's your lecture load, there's what you do. (Ciaran)

Donal viewed these external policies and guidelines as a form of validation for individual actions rather than a catalyst for individual change:

Not particularly but it'd give me a warm and fuzzy feeling if somebody's saying, "on a national level, we should be doing this," you know. I mean the National Digital Forum, they changed the name a couple times, that was a great thing, that was brilliant, because it validates what people are doing. So they're saying that this is a good way to educate people, it's a good way to use technology ……. it's a validation, and that is important. (Donal)

5.4.3. The influence of research on our academic practice

Participants were asked to comment on the relevance of academic research as an influencing force on individual technology practice and decision-making. One might have assumed that this sample of academics, many of whom have contributed to their respective fields of research, would recognise the value of engagements with published educational technology research. Surprisingly, the majority of the participants paid scant attention to academic research relating to the adoption and use of educational technology. Fiona, Megan, Ben, Barry, Julia, Audrey and Ciaran all admit shortcomings in their attention to research. Julia recognised a need but acknowledges a failure to engage:

And to be honest, Daniel, I would need to sit … I've never actually looked for research around enhancement through technology. I would need to … I really would, I'd need to start reading. (Julia)

Megan, whose teaching was predominately face-to-face, had attended some research presentations:

> *Haven't looked at any research that tells me technology, but I've attended talks that have definitely said we need to move on, the way students learn.* (Megan)

And yet, despite her recognition of the value of disseminated research, she had not acted on the information:

> *I go to talks that I could go to, and then you come back all geared up and it goes by the wayside again. But that does interest me, and research does matter to me about it, yeah.* (Megan)

Time, a deficiency in support, and the prioritisation of other academic tasks, were some of the reasons given for non-engagement with educational technology related research:

> *No, afraid not......Generally, it's time. I spend my life firefighting.* (Barry)

> *Don't have the time. You know, to research and look at research, and do all of that like.* (Julia)

> *Rush, and lack of, you know kind of structure and supports. Maybe the dinosaur in me didn't rush out to kind of go, what's the best way to do it?* (Kate)

Donal had made extensive use of educational technology in his teaching practice and had experimented with blended learning and flipped classroom pedagogy. He admitted to engaging in some limited use of research:

I haven't done a lot of research. I have looked at some research in relation to how students learn, and what the optimum time is particularly for video-based materials (Donal)

Peter was critical of his colleagues' lack of engagement with research and the missed opportunities to contribute back to knowledge. He noted a failure to interrogate the student experience and to evaluate the true impact of educational technology:

And that's something we don't do in this college. We don't measure the impact as much as we should. It tends to be quite, "Oh, I think it worked. It looked like it worked." Or, "I enjoyed it." We don't actually ask the students as much, and really do a proper survey on the students and analyse students. We tend to ignore dissenting voices, I think, in the student population in and around technology. (Peter)

Peter, Duncan, Dorothy and Kate made up the minority in the sample who had sought learnings from published academic research. Duncan had experimented with video-based learning content and had leveraged research to refine his practice:

Yeah. It does, because the things that I choose to do, I do research them. For instance, when I was teaching part-time here, I used to ... because I know students don't want to get bored, so I started using videos, and a lot of them came back, and said to me ... when I did the QA2 form, and QA1 form, they liked the videos. I said, "I wonder if there's any sort of pedagogical basis for this?" I actually went out and researched it. (Duncan)

While Duncan engaged with published research following his early experiments with video, Paul adopted a different approach and decided to engage with the research prior to his implementation of semantic wikis:

> *I adopted Semantic Wikis as a learning tool within the classroom. I didn't do that until I actually had looked at the research literature out there that showed evidence that this was a positive thing to do. So, what I did was I had an issue with students learning particular topic, and I tried to tackle that using learning technology. I did analysis on it at the end, and I found that it did have a positive impact, and I published a paper…(Peter)*

Engagement with published research before implementation was an approach used by Dorothy and her colleagues, who engaged in a literature review prior to designing a new online degree. Whilst the design team felt that the knowledge acquired through research was highly beneficial during the design of the degree, research also became useful post the commencement of the degree following the identification of issues with online student engagement:

> *…so I kinda did some reading on it was like, right, okay…. this seems that engagement is as a challenge from a student perspective. Engagement as a challenge the world over and getting students to engage when they're in front of you is a real challenge. But it seems to be actually exacerbated online.* (Dorothy)

Like Peter, Duncan had contributed to the field of educational technology research. He recounts experimenting with the Socrative in-class polling application and disseminating his experiences via a research paper which had subsequently been well-cited:

> *But what particularly please me was that when I started using software a lot, I was very pleased with that. I got really positive feedback from sports*

students, and I actually wrote a paper on it, and I did about of research, and I published. (Duncan)

His engagement with the educational technology research community had been extremely rewarding from a personal perspective, and he had progressed to writing additional papers on his experiences with video and other educational technologies.

Peter was the only participant to comment on the nature of educational technology research. While Peter had engaged with research and had found it to be extremely beneficial to his practice, he sounded a note of caution with regard to what he perceived to be an overly positive stance adopted by many educational technology researchers:

> *Yeah, I think there's some good stories out there and there's good research out there that shows that in certain circumstances certain technologies can have a very positive effect on students' learning. Conversely, there is a huge gap in a lot of ... there's a lot of open questions about a lot of technologies that needs more research, so I think ... I think there's an international art of that technology in classroom's positive, and I think the research community has been a little remiss, from what I can see, in challenging it enough, that we all as academics have taken quite a positive approach and that anybody who tries to research from questioning it doesn't necessarily get the funding that is out there. (Peter)*

5.4.4. The influence of the Knowledge Economy

A prevailing discourse amongst the participants centred around the influence of the economy on both programme provision and technology use in the curricula. The Irish and global economies, which show a clear bias towards discipline areas linked to science, technology, engineering and mathematics (STEM), were seen as an imperative for the use of technology in education.

Megan, Leo, Ben, Duncan and Kate all made direct references to the influences of the European or Irish economy. Leo who works in the humanities, was acutely aware of the influence of STEM:

> *External drivers for the use of technology? Yeah, I think the economy certainly is one, and the jobs market. I think we're living in the age of STEM. Science, technology, engineering and maths.* (Leo)

The links between technology and employability were also considered to be factors influencing the academic use of technology. Audrey felt that the lexicon of technology-related employability influences the programme choices of students:

> *So, it is a perception out there among students, that if I'm going to do something that has the word digital in it, digital media, digital marketing, digital whatever, I'm doing something that's technology, and that's where I'll get a job from.* (Audrey)

While many of the participants were critical of the unchallenged nature of external technology discourses, they repeatedly leveraged a commonsensical logic of technology during interviews. For example, while Kate suggested the need for a critical perspective of technology, she also contrasted the digitally connected economy to education and labelled academics as 'dinosaurs' for non-adoption:

> *We are the most digitally engaged economy in Europe. We have more people trading online here than in any other country in Europe, so we're like double what they're doing in Germany. Do you know what I mean? So technology is, and so us not being part of it is actually us being dinosaurs!* (Kate)

Both Duncan and Leo supported the discourse of the responsible citizen who needs to be technologically empowered by academia to participate in the knowledge economy:

> *Because I see our primary motive here, not everyone would agree with me, is about getting students fit for the workplace. That they can participate as good citizens and good workers. And that's what I see as my agenda.* (Duncan)

> *The graduate will need to know how to type, how to go online, how to find a website, how to do some research on a journal, so they'll need to know technology.* (Leo)

5.4.5. Discourses of Progress and Modernisation

Many of the participants described educational technology as an inevitability, a consequence of modernity and a signal of the changing technological nature of the outside world. The proliferation of educational technology in education was framed as 'common sense', a logical component of modern education that satisfies the needs of a changing student demographic while conveying an exteriorised image of modernity and progress:

> *It's fashionable, it's in policy, it's being kind of pushed by policy and it's kind of ... Yeah, it's kind of...of the moment.* (Dorothy)

> *just accept that that's the way children are going. So therefore, we have to be with it. That's what the economy is looking for, that's the way the children are gonna be literate, like that.* (Megan)

> *we're the newest people on the block and the only way that we can make an impact is to leverage our use of technology* (Ben)

Well I think in 10 year's time, I'd be highly surprised if in 10 year's time, the mode of teaching and learning has not changed significantly to where I am. That's what I believe. I think that the idea of giving lectures will be completely outdated. I don't think we'd be in the situation where we'd be putting people into lectures right, and labs, the way we do them now, and scheduling them en bloc, I think that's ... gonna die. (Donal)

Traditional ways of teaching were challenged through technology. For example, both Megan and Irene used the identical phrase 'old way' when critiquing their own practice, which they sensed required some form of modernisation through technology:

I think you just have to move. You don't have to move, but you have to start to move. You have to do some of it because that's the way younger people are learning. So you can't ... We're not going to keep them, I think, if we keep bringing them back to old ways. Whereas, if they're used to screens, and they're used to finding stuff out quickly ... Equally, there's room for talk and discussion, but I just think you have to, yeah, I think you have to move with it. (Megan)

I mean, technology is here. You just gotta accept that. There are always gonna be people that are going to say we should stick to the old way. The old way's gone. We have to constantly keep moving or we go behind. (Irene)

Dorothy and Leo pointed to the influence of the outside world and what they saw as the ongoing technological transformation of modern society, which now influences education:

In terms of where it's coming from, I think it's coming from society in general. I think we're using technology to some degree in education *because like Everest, it's there and it would be impossible to delineate education from everything else that's happening beyond...* (Dorothy)

I'd say one of the key drivers is, it's the way the world is going. It's the way the economy is going. It's also the way society is going. And our graduates need to be comfortable using technology. So, I think that drives it. (Leo)

Regardless of whether the ‘old way’ or ‘new way’ is better, student expectation of technology use was also seen as an imperative for technology adoption and practice change:

...because students probably expect a standard of education that they don't want to go in and be with acetates or anything like that. They want the top of the range technology and programmes, software programmes, and everything like that available to them within their learning. (Gail)

We all know that we've actually got to change. The chalk and talk and standing up in front of people actually is just not going to work in the future. The generations coming through just aren't going to accept that after a period of time. So, we have to be ahead of the posse, in that case then. (Ben)

While Ben acknowledged the expectations of students and was accepting of a need for change, other participants questioned the uncritiqued discourse of modernisation. If technology portrays a sense of academic modernisation, does a desire to embrace the ‘new’ cloud judgements of how and why technology is used? Donal felt that the optics of educational technology take precedence over experience and outcomes:

it sounds all nice and sexy, oh we're going to have at least one module delivered per semester in this programme to make it sound sexy. And then

> *somebody's given it and told, "Well, deliver it by Adobe Connect," without any real thought about how to use technology or what you're going to do with the technology or what delivering a module online means, or without designing the modules so that the students would get the material in a professional fashion and would be able to interact in a different way. It's just delivered...........say it online!* (Donal)

Peter also highlighted concerns around the unchallenged logic of educational technology and an uncritiqued acceptance of its place within the modern teaching environment. He felt that the ill-considered adoption of educational technology might result in unintended consequences for the student:

> *I think a lot of people use technology blindly because, they just see it as they're supposed to use it. There's a little bit of a problem in that, in that we probably don't stop and think enough about the technology that we use and why we use it. So, there's a danger to kinda miss a step there, that all of a sudden ... and the real users are students, effectively, that there are technologies that get foisted upon students without any due regard to why we're using it, what's the problem that's been solved, and that's how I always approach whether or not technology should be in the classroom.* (Peter)

Blame for the uncritiqued use of educational technology, and the absence of meaningful counter-discourses was attributed to others, particularly academic management. Management was adjudged to lack a true understanding of technology while promoting it out of a need to be seen to embrace progress and modernity:

> *I think because it's a thing that's out there, and they feel that we should be involved in this thing that's out there or we'll be left behind if we're not*

> *involved in this 'thing'. But I don't think any of them have a notion of what it's about.* (Audrey)

Kate was representative of many of the participants who expressed misgivings about our use of technology and recognised a need to reflect upon our actions. Like others, she laid blame at the feet of management:

> *One of the things.... I suppose we're encouraged to go online, at a college level, they're saying we want online delivery because this is the future. And I do think at a management level you kind of have this, "we are marching forward into this brave new world". And you kind of go "actually, can we just slow down, because I'm not entirely sure that you really understand what we're doing here".* (Kate)

While there was a recognition of a need for a challenge to the dominant discourses of adoption and modernisation, there appeared to be few examples of alternative ways of thinking:

> *Yeah, it's the information age. It seems to be where the industrial revolution, technological revolution, the information revolution. So, that's driving it, I think. And nobody seems to be breaking from the way. So, like the herd of buffaloes that are running, nobody's wanting to break away from the pack. We're all going in this direction, so every University is probably forging ahead with the next big thing, you know.* (Leo)

5.5. Conclusions

This chapter has explored the participants' perceptions of practice change arising from their use of technology. Change, in many cases, was perceived as gradual yet significant when examined over the totality of the individual's career. Transitions from the overhead projector to contemporary digital technologies, had in some cases, taken place over decades. As technology was integrated into practice, doubts emerged around the validity of traditional didactic approaches to teaching, which were challenged by the introduction of technology. Resulting shifts towards new pedagogies appeared to take time, a gradual response to the consequences of technology adoption.

Transitions emerged as a key theme for the participants, highlighting the struggle experienced in their transitions to new pedagogies and new technology platforms. The online space was seen as particularly problematic, with many of the participants expressing unease and dissatisfaction with a loss of immediacy, a practice of depersonalisation, and feelings of disembodiment. In using metaphors that describe speaking into 'the abyss', '*the ether', and 'the darkness',* these participants communicated a sense of disconnect. They encountered an inability to leverage their existing tacit skillset, which was normally relied upon to 'read' the mood of the physical teaching space and adjust the trajectory of a teaching session in response to students' facial expressions and body language.

The chapter has also brought attention to the mechanisms by which these participants informed their practice of technology use. A culture of peer knowledge sharing played a key role in the development of practice and was seen as highly beneficial, despite reported issues with sharing knowledge across disciplines and the withholding of knowledge by a minority of individuals. In highlighting their struggles to engage with formalised training, the participants noted the importance of learning through experimentation and also through observing and mimicking the practices of others.

The chapter has also examined participants' perspectives on the influence of policy on practice. Interestingly, the participants feel that policy has played no significant role in shaping individual academic practice. While many of the participants were aware of external sites of policy such as the national forum, the HEA and the EU, knowledge of institutional and sectoral sources of policy was lacking, with many participants assuming the existence of policy.

Participants exhibited a greater level of knowledge and regard for policies of compliance and showed little interest in seeking out institutional technology policy.

Academic research also appeared to play only a minor role in the guidance of practice. While those academics who had engaged with published literature had reported benefits, the majority reported a lack of time to invest in explorations of the literature. This may be a contributing factor to the participants' reliance on other ways of informing their practice.

Finally, the participants outlined a number of imperatives which they felt had influenced and rationalised technology adoption at sectoral, institutional, and individual levels. The discourses of the knowledge economy, as well as discourses of modernisation and progress were highlighted as grounds for the use of technology in education.

The next chapter will consider technology as a site of social struggle, examining themes of conflict, resistance, power and control. The chapter will also give further consideration to the imperatives for technology use, examining the roles and influence of management and students. The themes outlined in both of the findings chapters will then be discussed across chapters 7 & 8.

CHAPTER 6 | Findings Part 2

6.1. Introduction

This chapter explores academics' experiences of educational technology via a focus on the social space in which practice is situated. For Bourdieu, the understanding of the practice of individuals must take into account the field in which the practices are undertaken:

> *the true object of social science is not the individual, even though one cannot construct a field if not through individuals, since the information necessary for statistical analysis is generally attached to individuals or institutions! It is the field which is primary and must be the focus of the research operations.*
>
> (Bourdieu and Wacquant, 1992, p.107)

Understanding practice is not simply an analysis of the aggregate of individual behaviours (Jenkins, 2006). Practice must be understood and contextualised within the associated social space, understanding the forms of available capital, the strategies for progression, the doxa, the hierarchy of actors, and the distinctive logics of practice which are characteristic of the field (Thomson, 2012). During the course of interviews, participants offered insights into their field and their perceptions and experiences of its normative practices, the rules of technology use, the actors who influence technology use, and the sites of struggle which emerge around technology. The chapter begins the exploration of these topics with an overview of the participants' perspectives on students and educational technology. It is noteworthy that many of the decisions taken with regard to the utilisation of technology are based on the conceptualisation of the student as a 'digital native' (Prensky, 2001). For these academics, technology is seen as a key source of advantage for their students, offering flexibility, an improved educational experience, and enhanced work-life balance. While technology is seen to provide advantages, it is not without its apparent downsides, as participants acknowledge deteriorating patterns of student engagement, changing student behaviours, and a sense of emerging disconnect between faculty and students.

Participants' beliefs and experiences with regard to the organisation and its culture are also examined. The institution's rationale for the use of educational technology is met with varying degrees of scepticism and mistrust. Technology is viewed with suspicion by some, seen as a mechanism for reducing costs, opening new markets, and resolving the resourcing dilemmas of management. The institute and its management are criticised for a perceived failure to create posts of responsibility for the management of technology and to adequately support academic practice change.

Of particular note are the struggles and fears which are linked to technology use. The risk of job losses and rationalisation are associated with technology and the emerging concept of the digital university. Some of the participants spoke of a culture of observation and judgement whereby those who offered critical challenges to technology use in practice were labelled and, in some cases, marginalised. While some participants report an environment that is supportive and egalitarian, others highlight a space of conflict and tension between management and academics, marked by struggles over the control of the curriculum and the use of technology within it.

As in the previous chapter, the presentation of these findings relies heavily on the voices of the participants. A discussion and further analysis of the findings is offered in chapters 7 & 8.

6.2. Technology and the Student

In this section, I present the findings as they relate to the theme of 'Technology and the Student'. Students were considered, not only as potentially influential actors within the hierarchised field, but also as subjects of technology discourse and doxa, a category of actor which might directly or indirectly hold influence over the technology practice of these academics. During the course of interviews, participants highlighted a number of student-related imperatives for the use of technology. These included the actions and behaviours of students, as well as academic conceptualisations of the contemporary student and the linking of educational technology to powerful discourses that underpin the logics of technology practice.

6.2.1.Beliefs and Truisms

The benefits afforded to students through the use of technology were foremost in the minds of participants when rationalising their utilisation of technology in practice. The commonality of beliefs amongst the participants was succinctly captured in the following statement by Barry:

> *I think it makes for a better learning experience for the students. A more modern experience and more of what they're used to. Also, I actually just genuinely think from the learning perspective, I think it works well. That's what drives me to do it.* (Barry).

Ease of access to learning materials was a benefit highlighted by all participants, with an acknowledgement that the provision of a range of currently used student support materials would be problematic in an academic environment that did not utilise technology. Several of the participants contrasted their own experiences as students with the experiences of their current students, who, unlike their predecessors, now have the benefit of digital technologies:

> *"You can sit at home and log onto the library and access databases and papers. You've got much more of easier access to them than back in my student days"* (Gail).

Well, certainly in terms of the students' access to material, I think it's absolutely fabulous. They have vastly increased access to learning resources, to information, to materials than I would have actually had as a student. (Ben)

While ease of access to learning materials was cited as an imperative, it was also perceived to be an expectation of the modern student, reflecting what participants saw as a wider societal expectation of technology use within education:

Yeah, it makes materials more accessible, it, the, the profile of students that we're teaching expect it. They, they've grown up with these things. So I think it would look odd if we didn't have the latest and greatest. (Fiona)

The students probably expect its use. There's an expectation probably because we've done it, putting things online. And also communicating by email. There's that expectation. I think there is. And it's reasonable that they'd have that expectation. (Leo)

they've just grown up with it. They just assume that the latest technology is the best technology and it should be always available. Whether or not the old technology is still usable, it seems to be that you have to get the latest one. (Peter)

Strong linkages were made between the goals of flexible learning and the utilisation of educational technology. Flexibility in engagement and the provision of learning was seen as being particularly pertinent in view of a changing student demographic and evolving patterns of student engagement. Technology was regarded as being advantageous to student cohorts who needed to balance full-time study with the economic necessity of employment. Donal had surveyed his full-time students and believed that his utilisation of educational technology had helped his students to maintain a meaningful engagement with their full-time studies:

> *What we're doing is recognising the reality that we have a group of people, a cohort of students to serve who are really busy. The research I have is 69% of them are working. If I look at my 3rd year students in the school of* [specified school]*, 82% of them are working more than 15 hours a week! All we're doing is developing a model that recognises the reality that these people need to work, want to work, and will continue to work. We're providing the content to them in a different way.* (Donal)

Dorothy believed that her use of educational technology afforded significant advantages to her 'non-traditional' students:

> *And so, the idea that we can cater for asynchronous learning is obviously a huge advantage when we're dealing with non-traditional students like the ones that we have here. I think it's a huge advantage in the context of how many of our students are working and not working part-time. A lot of them are, are working the guts of full-time if not full-time, due to economic necessity. So I think there's a lot of advantages in that sense* (Dorothy).

Full-time students were not seen as the sole beneficiaries of educational technology, with participants highlighting a number of benefits to part-time students. Julia, Ciaran, Leo, Barry, Duncan, Donal, Peter, and Dorothy all referred to the flexibilities and advantages that technology affords the part-time student. Julia, who had spent several years lecturing full-time and part-time students, reflected on the positive changes that educational technology had brought to the part-time student experience:

> *I've lectured them a few years, actually, on the evening programme. And you're looking at them, going, this is crazy, these are coming in here after*

doing a day's work. They're getting a lecture from six to eight, and then I walk in from eight to 10 and they are exhausted. Whereas the opportunity for them to get the lecture and to have it recorded and to look at it as often as they want, and if they have any questions, to just email. Or if they need extra supports, that I can go on and do a separate recording that will cover the questions that they have. (Julia).

The participants were also strong in the belief that technology improves learning, although there appeared to be some blurring between the experiential and the cognitive aspects of learning. Fiona believed that technology "*makes it easier, it makes it easier for them to learn*" (Fiona). Donal commented that the students "*learn a lot more*" (Donal), while Megan believed that educational technology enhanced the learning experience by stimulating the interest of students:

They enhance it. They definitely enhance learning. We know ourselves. ... Even myself, if we go to a workshop, and somebody is there with a PowerPoint. And then they start playing different bits or they do interesting things. Definitely more interesting! (Megan)

Participants commonly cited improvements in engagement and attentiveness. Ciaran for example, believed that "*the students are more visual now*" (Ciaran) and that technology suited the learning styles of our new visual learners. Duncan believed that the attention-grabbing nature of new technology was a way to cultivate interest and engagement in his module:

So, for me, technology in the classroom is about making the delivery of the thing more relevant and more contextual and keeping engagement. So everything I do with technology is to drive engagement. (Duncan)

Duncan and Peter realised the value of asynchronous learning materials that provided students with the benefits of flexible access and offered a different perspective and method of engagement during learning:

> *Even though they'd had their class on Monday, they went back and they had a look at those recordings again, so I think that's kind of proof that students see value in the recorded material and the digital, I suppose, aspects of it. It just gives them a different angle I think on the content.* (Duncan)

> *What I like about it is, is it allows a student to go at their own pace. Because I really think we need a multi pace learning environment. In a lot of cases, a lab moves ... it has to move at a certain pace, which loses a lot of the learners.* (Peter)

In describing these benefits, several of the participants acknowledged doubt over the validity of their claims of enhancement. While Fiona believed that technology made learning easier, she was unsure as to whether it improved the learning process at a cognitive level:

> *I'd say it makes it easier, it makes it easier for them to learn. I don't know if there's an improvement.* (Fiona)

Barry, like others, casted doubt over the rigour of his own claims:

> *Do I see evidence of it or is it just anecdotal? I can't really point to, you know, improved results or retention or anything like that. I just haven't done that thing. I tend to be very much caught up in the actual delivery and the doing of it.* (Barry)

Peter, Audrey and Duncan placed value in technology's ability to exteriorise students' activity, providing insight into student engagement:

> *...every single one of the class of the full-time face to face students had interacted with the online videos of the online sessions, within the last week.* (Peter)

> *Good about it is......pieces of classwork and things like that, the students can do it, they can upload it, and you've a great tracking mechanism for the ones who are doing some work. You can go in and have a look at the analytics behind it and see kind of like who's accessing it and who's been on, who's sort of like paying any attention to your course and that kind of thing.* (Audrey)

> *I think it's does have fantastic benefits. You can see it from the students who are logging on. I mean, I go in, and look at the logs regularly to see if students are logging on, and to see who is logging on. I can see what resources they're using, so I think that's very good.* (Duncan)

This form of student data was seen as particularly useful in gaining insight into individual behaviours and actions within larger cohorts of students, a form of observation that may have been impossible in the absence of technology.

6.2.2. The student as a digital native

There was a strong acknowledgement among the participants that current students could be described using the term ‘digital native’ insofar as they had spent much of their lives surrounded by a myriad of technologies that influenced almost every aspect of their everyday social reality:

And they are that generation that have grown up with the screen and with the touch pad. I do agree that they are more tech savvy I think, the younger generation, particularly our students coming in. (Leo)

Some of the current students would have grown up using technology from as far back as they can remember. And, that's my impression of digital native. They've literally grown up, it's second nature, just like reading a book is. (Irene)

Kate believed that academics should be cognisant of the changing profiles and needs of students who have been brought up in a digital world:

...if you are so tied up in your old-fashioned way and you don't have even an awareness of their real-life existence, that's not a good place to be either. So we have to be in this medium where we're the conduit between digital and life. (Kate)

While there was a general level of support for the concept of the 'digital native', distinctions were made between consumer technology usage in society and technology use within education:

I think that the day-to-day technologies we use, smartphones, tablets, I think they're designed to be easy to use and easy to negotiate. So I don't necessarily buy into that debate. (Gail)

I find that they use technology all the time in their lives, but sometimes when it comes to the technology for college purposes, that perhaps they find that trickier. (Dorothy)

There was a sense among the participants that the simplification by design of consumer technologies had resulted in a student body which was less technologically aware and capable than their predecessors:

> *One issue that's become very, very apparent is that in terms of the technology that they would touch, they have an in-depth knowledge of it, but other technologies they've only got a cursory knowledge…* (Ben)

> *The 'digital natives' is where something is an app and they contribute or put up content, digital natives as in using excel, word, anything that we would take, or I think our generation would take to be a computer literate, em, no they're hopelessly, they're not very well equipped to write a report, to do up a graph, to do anything like that* (Ciaran)

Peter had noticed a definite change in his students in the last decade and believed that his students were less technologically capable than those that have gone before them:

> *I find with the student population is that they're quite adept at using technology within a very, very siloed view, but when you go outside of that comfort zone, they understand much less about technology now than students when I started teaching about 10 years ago, those would have understood more.* (Peter)

In the absence of a critical challenge to the conceptualisation of the student as a digital native, some new academic programmes were designed to incorporate high levels of technology use in teaching. These decisions were based on the belief that the students would possess the prerequisite skills to engage with new and preferred forms of teaching and assessment. Participants reported tension between growing demands for the digitisation of teaching and a reality in which not all students were technology literate:

We've heard this term "digital natives" from the fellow called "Prensky". I've heard that name, but my experience has been that not every student we have here is a digital native. (Duncan)

Ciaran highlighted the use of assumptions and a reliance on truisms in making programme design decisions with regards to technology:

I know over the years when we looked at programmes and designing programmes that we just had the assumption that they knew how to use excel and word. And I think the more we had them hand up labs in that type of format we realised, no they don't. (Ciaran)

Kate was one of a team of academics who had designed a blended programme. Like Ciaran, assumptions about the student preference for the use of technology had contributed to decisions on programme design:

So that we move away from the idea that oh, because you are social media savvy and you are technology savvy. We've fallen to the trap that everybody falls into, that assuming that 18, 19-year-olds know how to use all this technology appropriately. (Kate)

Donal provided us with an example of individual academic innovation in designing a module that he felt would work perfectly for the modern digital native student. Donal designed a blended learning module which mixed workshops and a collection of online materials and resources. Everything that he had been led to believe about the modern digitally savvy student should have guaranteed a successful delivery:

...they weren't used to it and they really kind of struggled, without me being directly, physically in their space. They really struggled with that. So, even

though I thought I was doing a good job using technology to give them flexibility to be able to do what I thought was a great thing for them, they still struggled with the possibility of having to think on their own or do things on their own, you know? (Donal)

The participants were critical of the apparent negative influence of technology in establishing a number of problematic behavioural traits in the student body. Perceived deficiencies in interpersonal skills, communication skills, and group work skills were attributed to the proliferation of technology into everyday social interactions. Irene was critical of an emerging 'tech speak' but wondered if faculty-led criticisms of the present-day student mirrored similar forms of criticism that she had experienced as a young student:

I think there's probably an element of frustration. The tech speak that everybody gives out about. I think they have problems expressing themselves in full sentences...and, perhaps, my lecturers we're giving out about my generation in the same way that we are, and they were blaming something else. They were probably blaming television (Irene)

There was some questioning of the use of technology in circumstances where the students suffered from deficiencies in interpersonal and communication skills. Dorothy questioned the logic of putting the students behind yet another screen:

they really struggle when it comes to emotional intelligence and most notably within the framework of emotional intelligence, they struggle in relation to conflict and managing conflict because that's a deeply interpersonal. We know that that's their Achilles heel. Then we stick them behind a computer knowing that they also spend most of their lives behind other screens in their lives. You know, I arrived into a lecture theatre last week and it was eerie because there was 100 students in the room and *complete silence, no one was speaking, they were all on their phone.* (Dorothy)

And Kate pointed to problems in younger students' online interactions:

They don't understand, like they might be able to have a chat with their friends on Skype, but they are not comfortable, or whatever it is, about actually taking part in a classroom online, where they are an active participant. (Kate)

6.2.3. Changing student behaviours and expectations

Participants also noted a number of changes in student behaviours which they attributed to the presence of technology in the education setting. Fiona, Gail, Irene, Audrey, Duncan, Peter, Dorothy, and Ciaran, all remarked on the student's newfound preference for digital resources over paper-based or other formats:

I put all my materials in a course, a physical course pack. The number of people buying that is decreasing year on year. Because they're accessing the materials on their iPad. They're bringing their own devices or through the phone. (Fiona)

But now, I suppose that there's an expectation that there's a huge volume of information available and we use PowerPoints, and we refer to different material that's available online. (Gail)

The students probably expect its use. There's an expectation probably because we've done it, putting things online. (Leo)

Full-time students were increasingly demanding access to technologies and resources which had traditionally been reserved for part-time students:

A real interesting thing that's happened in the last two years, is that some of the modules I teach are fully online, and some of them are face-to-face. Invariably, once the face-to-face students get wind of an online Moodle page, they want in on that. (Peter)

However, many of the academics felt that the provision of these same resources was a contributing factor in changing patterns of engagement in full-time student cohorts. Student attendance, attentiveness, engagement and interaction at face-to-face teaching sessions were said to have suffered as a result of technology:

So oftentimes they might sit in class and you know, not actually take notes or anything like that, and because it's all up on our Moodle. Or they might not come to class because it's all up Moodle. (Dorothy)

Leo felt that he was competing for attention with the students' electronic devices during his lecture sessions. He found this 'difficult' and 'challenging', and despite his best efforts, he noted the rows of students who seem distracted by screens during teaching time:

Where the face-to-face, now they're there and you see them, and they're in the lecture theatre, but they're on phones, they could be on computers, they're not listening.... or on Moodle most of the time. And you don't.... you come you go. (Leo)

Technology was also associated with a changing pattern of student engagement outside of scheduled teaching time. Ben, Peter and Fiona highlighted a constant stream of digital communications from students:

> *Yeah, the timelines have blurred substantially. It's now not a nine to five type of environment but it's a midnight-to-midnight environment. You can actually get stuff in from students at any particular time. I've actually gotten emails in at one o'clock in the morning. That's their lifestyle, that sort of stuff.* (Ben)

Peter and Fiona noted that a lack of an instant response could provoke a negative reaction:

> *It's that feeling of always being on. I've had situations where students will email you at 12 at night, and you get an email at eight saying, "You haven't replied to me yet...giving out", but that's the expectation that they have.* (Peter)

> *Yeah. And they'll try to challenge me and say, I sent you an email on Saturday or Sunday. And I say, well I don't work on Saturdays or Sundays. (Fiona)*

Despite these issues, participants were mindful of the reactions of students to academics' non-use of technology. Ben felt that the students were particularly critical of academics who did not utilise technology:

> *They will look at them as being for the want of a better description, 'dinosaurs', and will adapt because in the student's mind, they will do whatever they have to do in order to get over that exam, in that case then.* (Ben)

Student pressure appeared to be a contributing factor in moving reluctant academics towards the adoption of educational technology, forcing an engagement with technology which they may have otherwise avoided:

> *...the only feedback I get is from the students. They go, "Ugh, so-and-so just won't. Nothing's on Moodle!" Griping and moaning comparing that your stuff's all there and we can do whatever, but we can't access it and we can't get it from outside college. I think people are slowly being dragged along.* (Barry)

> *We really haven't had any complaints from students. No, sorry, that wouldn't be fair. There's been no formal complaints from students. You'd certainly hear mutterings, you know, kind of under the radar.... (Kate)*

Pressure from students contributed to what Audrey described as the 'unwritten policy', where a culture of expectation pushes academics into the use of educational technology:

> *... I mean, there are lecturers in here who've refused to use it. And now the students are complaining, and it's nearly now becoming a policy, you must use it......we will get told at school meetings everybody should be using Moodle.* (Audrey)

While demanding technology use in their educational experiences, students were also capable of criticising inappropriate use of technology. Like academics, it appeared that the critical voice of the students also struggled for legitimacy:

> *And there are nuggets of dissenting kind of voice. Somebody's, "He started using this bloody thing", but you hear them having conversations in the classroom. You try not to hear it, but you do hear it and there are dissenting voices. What's maybe the problem here is that maybe the students don't feel that they can stand and say, "I don't think this is a good idea. This is not a good idea in how we assess."* (Peter)

6.2.4. Changing Relationships

Participants also voiced concerns linked to the changing nature of the relationships between academics and students, which were now mediated by technology. There was a sense that academics would be dehumanised and disembodied, accessible only through computer interfaces:

> *I'd fear the contact with the lecturer and the student. It will impact on that relationship. The learner and the educator. I think it will. It could be positive; it could be negative. The negative side is that the student in ten years' time might only see me on a screen. Won't actually meet me. And I don't think that's ... I'd be worried about that.* (Leo)

> *For me, the danger of this digital campus is that everybody's in little pods all on their own, with no proper communication between them. (Audrey)*

> *If you cast your mind back to the undergraduate years and you think of the amount of times you'd have spent in the billiard hall or the café or something like that and you actually created those social skills actually in there. They're really important to education. My fear is that technology will remove that. (Ben)*

Particular attention was drawn to the unsatisfactory nature of the relationship with online students. Gail felt that her online students were anonymous to her:

> *I don't think there is a relationship. I don't have one with them. They are anonymous to me. I don't have a sense of them, I don't have a sense of where they're at. I find it very disconnecting...*(Gail)

Participants, all of whom had some experience of face-to-face teaching, exhibited little knowledge of the techniques that might be used to develop relationships with the online student cohort. These online students remained somewhat anonymous, a name on a list:

> *Yeah, I suppose you do get to know the full-time students because of the face-to-face contact. You get to know their first name, you put names to faces more quickly. There have been times where I've come into graduation and somebody's come up to me and went, "Thanks for you know ..." and..., "Oh right, you're on my part-time list. Ah, you're that name."* (Barry)

> *It's much more of a struggle to relate to people, and then we do meet them, and like somebody you've been talking to maybe online, and this total stranger is standing in front of you, that's quite disconcerting.* (Kate)

This sense of disconnect was also evident in the account of Irene, who noted that her interaction with students improved after a real-world encounter:

> *And we were meeting halfway through the semester. They just happened to hear somebody call me by name. And, they were like, "Oh, are you [participant name]? Oh, we're your students." And it was funny that our interaction online improved.* (Irene)

Ciaran was one of the few participants who demonstrated an awareness of the identities of his online learners. He had been lecturing online for over a decade and had felt that he had a better relationship with his online students when compared to his physically present yet disengaged campus-based students:

> *I probably know more of the online guys because I get more communication from them. Where the face to face, now they're there and you see them, and they're in the lecture theatre, but they're on phones, they could be on computers, they're not listening or on Moodle most of the time. And you don't.... you come you go.* (Ciaran)

This dissatisfaction with the altered student/academic relationship resulted in calls for a move away from fully online programmes towards blended models of learning. Gail, Irene, Julia, Dorothy, Kate and Duncan all advocated for blended models of delivery that balance technology and human interaction. The relationship with the student was something to be valued and preserved in the face of technological change:

> *I don't think it's ... 100% online is not ideal, I think, because we're humans, so you need that blend between some kind of face-to-face interactions or at least face to face interactions not with the lecturer, but at least with their peers. (Peter)*

6.3. The Organisation and Technology

In his work on economic anthropology, Bourdieu speaks of the value of conceptualising the 'firm' (the organisation or institution) as a field:

> *...if we enter the 'black box' that is the firm, we find not individuals, but, once again, a structure - that of the firm as a field...*
>
> (Bourdieu, 2005, p.205)

As with his pervious writings on field theory, Bourdieu emphasises the need to study the organisation as a field, seeing its structures, objective relations, forms of capital, logics and rules. If we conceptualise educational technology as being socially shaped along with its 'meanings, functions, and domains and use' (Sterne, 2003, p.373), then an understanding of the organisational field in which a technology is shaped may provide us with an insight into how technology practices within the field have come to be. In this enquiry, participants were asked to reflect on the influence of their organisation, giving consideration to the organisational imperatives for technology use, the norms of technology practice, and the power structures which govern and support technology use.

6.3.1. *The organisation and its imperatives for technology use*

Whereas the participants positioned themselves as users of technology for the benefit of others, institutional motivations for the use of technology were treated with a high degree of scepticism. In the eyes of participants, the institution's public declarations regarding its motivations for use of technology were set in contrast to a perceived underlying ideology that participants believed was focused on issues of cost, globalisation, market competition, brand, and fiscal growth. Many of the participants felt that management viewed technology as a solution to the problem of diminishing resources. In particular, the opportunity to replace the physical teaching space with the online teaching space was seen as a method to reduce costs incurred in the provision of education. Cost was the primary imperative cited by nine of the participants when asked to explain the institution's rationale for promoting the use of educational technology:

> *And cost efficiency, the fact that we have a campus and there are certain amount of rooms and the space in those rooms is somewhat limited and there's a combination there of student availability, staff availability and room availability. If you take out one of those variables also that kind of becomes a little bit easier, but to some extent it's fashionable.* (Dorothy)

> *It's honestly cost savings, from what I can see.* (Donal)

> *I would say cost, and efficiencies would be a big driver.* (Duncan)

The substitution of the physical for the virtual was also seen as a mechanism for the massification of provision, allowing the institution to break the bounds of the physical constraints of campus buildings and the related limitations that the physical space imposed on student numbers:

Probably because they want to reach a greater number of students, and attract more people into the programmes. (Julia)

I think the driver is just that's ... I'm sure it's finance because it backs down, everything is finance. So I suppose, if you can get more people online, and they can do the course online, and you still have the bums on seats in here, then that's what it is. I don't think it's there to facilitate students. I think it's to just get more numbers in. Sign up as many people as you can. (Megan)

And again, my view on it is I'm not sure they're looking at the view of the student or the academic from it, it's just, "Let's just save money here." If we can give a lecture out to 400 people, instead of having 20 people in a lab, that's not efficient. But that's education. (Audrey)

The casting aside of the limitations of geographical location and physical space affords the institution opportunities to open up new markets and new revenue streams. Fiona suggested that the institution should look beyond its traditional catchment areas to other parts of the country. Interestingly, no consideration was given to the higher education institutions currently operating in these areas:

Um, I'd say cost saving, you know, like the E, like distance learning. Or being able to offer a course from Dublin, but a participants in Donegal or Sligo, or Cork Kerry. I don't think we do enough of that maybe. So I think it.... the driver is student numbers. And accessing people that are not traditionally face to face sitting in front of you. I think that's a big driver. (Fiona)

Participants acknowledged the 'marketplace' of educational provision and the role technology plays within a newly globalised competitive market of higher education. The brand and image of technology were seen to convey a message to that market:

> *Yeah again, a reputation. Expectation. Um, just another way of working that's expected. I think you look with it; I think you look, it's hip, it's en-vogue. Uh, so it's going back to reputation, brand. Positioning.* (Fiona)

> *I don't know, but I get a sense that they're looking outwards at what other people are doing. They're going, "We gotta join in, join this bandwagon quickly." Because that's ... Everybody's saying that's the way to go, this blended learning is the way to go in education, into the future. I think they're looking at other colleges, universities.* (Julia)

The nature of competition within the national education sector was perceived to be altered by technology. While Irish institutions once competed for students within their geographical catchment areas, technology has opened up new national and transnational frontiers. The participants were acutely aware of the nature of this new global marketplace:

> *we're probably competing at an international level as opposed to a local level. So, technology's going to become really important to that because it facilitates us operating on an international basis.* (Ben)

> *So, competition in an online environment, distance learning student, I suppose, where they can interact from any part of the country, is a huge issue here.* (Peter)

Peter recalled an example whereby a recent state-backed funding call for the provision of additional higher education places had stipulated the use of specific educational technology models as requisite for consideration for funding. This suggested that programmes that fail to align themselves to prescribed models of technology-enhanced delivery might face challenges regarding continued state funding and provision:

> *if somebody comes along, be it [university name] or [university name] and is offering an online course that is pretty much the same as the one we have right here because essentially the [funding body] tender document describes the course we have, if we don't tender for that and somebody picks it up in [university name], because it's online, it's gonna kill our programme here. (Peter)*

Academics recognised themselves as human capital and expressed a realisation that technology could reduce the institute's reliance on academics for programme provision. A reduction in the size of the academy was feared, as was a change to the normal student staff ratios:

> *The cost efficiencies there would be huge in terms of you wouldn't need five staff to deliver a number of modules for you, because if you found the content online, and the students were pulling it down, you'd need far less staff. I would say cost, and efficiencies would be a big driver.* (Fiona)

> *It's a much better use of resources, you can take on a lot more students. A lecturer can serve the huge amounts of students using that kind of technology, you know? (Donal)*

6.3.2. Leadership and Direction

Perceived shortcomings in technology leadership led to varying degrees of frustration. Identifying roles of responsibility for technology leadership appeared deeply problematic:

Like to be honest when you said the question about who controls technology, I don't know that it really is being controlled at the moment. (Dorothy)

Who are they? Nobody knows. Who's driving it? But certainly there ain't nobody here that's driving it. Nope. (Donal)

Concerns regarding a lack of ownership and strategic direction were associated with a decentralised technology management culture that seemed to defer the responsibility for technology to faculty and organisational units such as departments and schools.

Yeah, we've all the tools. I think we're thrown the tools and they go, "There youse go, we've given you the technology." (Barry)

There was a strong feeling within the group that the strategic management of educational technology was neglected by senior management:

But there's no strategic objective here about the use of technology in teaching and learning that I can see. (Donal)

But there's no controlled or planned use of technology. To me, it's about a lack of planning and lack of understanding in that case. (Ben)

To the participants, the absence of centralised technology management was problematic. There were repeated calls for the establishment of posts of responsibility for the governance of educational technology:

I think it's because that there's nobody in charge. There's nobody whose one sole role is the promotion, not just promotion, and the implementation. They have to be hands-on involved in the actual doing of *it and support people who are doing it as well. I think that's what's missing.* (Barry)

We probably should have a chief architect, or chief CIO. The equivalence for CIO ... Maybe CIO is the wrong ... A chief educational technology officer, CLTO who would be able to strategize, and pull things together. (Duncan)

Local governance of educational technology appeared to rest in a poorly defined decision-making space between academics and faculty heads. This devolution of responsibility was a source of concern, as the ability of management to make informed decisions on technology was questioned. To participants, an individual managers knowledge of technology and pedagogy was of paramount importance when assessing the validity of management decisions:

okay, so I consider that there's two kinds of management. The lecturing kind of management, who actually appreciate what's involved in lecturing, and the other management, who consider that you work 16 hours a week, and that's all you do. I think the lecturing management appreciate what's happening, to a large extent. (Audrey)

The people who make those decisions typically would tend to be the heads of departments. Now, if you've got a head of department who has come up through a technological background and is aware of what's there, he or she is well able to identify the training needs and that sort of stuff. If you've got heads of department that come from a non-technical background, I don't think they know what services technology can provide. (Ben)

Management were described as being enthusiastic and supportive of educational technology, and it was felt that they recognised the inherent value of technology use in practice. However, management's practical knowledge of technology was questioned:

> *...management are saying "This is fantastic, this is what we're going to do," they love it. But they don't understand the difficulties at a delivery level. (Kate)*

> *They know it can actually add value. Yes, they're aware of that. But when it gets down to the specifics of it, they don't have that knowledge.* (Ben)

> *I think they have a knowledge of technology at a particular level, but I think that once you go down into the detail...* (Duncan)

Time away from front line teaching and a lack of experience in the practicalities of educational technology use, were highlighted as factors in a dissonance between management goals and the reality of practice. There were concerns that senior management were reliant on past academic experiences as a frame of reference for strategic decision making. The relevance of such decisions was questioned:

> *If you look at let's say, a lot of the senior management, their picture of what lecturing is, is driven by their own experience. So, that experience has changed dramatically. I begin to wonder; are they being left behind?* (Ben)

> *Very high management, I don't know that they're really aware of how much, or how involved the online stuff is, and how good it works.* (Ciaran)

Management was seen to have developed an overly simplified perspective on technology which attributed practice change to technology and in the process, devalued the efforts and contributions of academic staff:

...and you're working against management, who think you do nothing anyway. And that you walk into a lecture and you go, "There's all that knowledge in my brain and on my PowerPoint," and you walk out, and you go, "All the assessments and corrections are done." And that's the mentality of the management, that management has, and you actually really do very little. (Audrey)

And I think perhaps people who are making decisions think that perhaps it's easier to do this stuff than it is in practice. (Dorothy)

6.3.3. Support and endorsement

Issues with the provision of end-user support were critiqued, with Fiona, Gail, Megan, Ben, Barry, Julia, Audrey, Donal, Dorothy, Ciaran and Kate highlighting apparent shortcomings in management's efforts to provide adequate supports for the enablement of practice change. A clear distinction was made between the optics of support and the actualities of support. There was a consensus that management had failed to implement structural changes to the organisation, which in the eyes of the participants, would signal a true commitment to the support of educational technology:

I think they want to be seen to be embracing technology, but I don't think they want the overhead for people to be employed, or to be given hours, or to be given whatever, to give their skills to other lecturers. (Audrey)

I do think we're falling short in terms of how we support our staff. There is the expectation that staff will use technology to its fullest extent and use the breadth of services and abilities that it provides. But yet, we don't adequately underpin our support staff in their usage (Ben)

There is, there's a huge problem with support for doing that, for the use of technology in learning here. There is no support. (Donal)

The absence of meaningful structural change, such as the creation of an educational technology support centre, was offered as evidence that management were failing to adequately address the support needs of academics:

Like we should have a teaching and learning unit in the college, so that when anybody is interested in trying to use technology for teaching and learning, they can come to two or three or four people and see what the possibilities are. (Donal)

My hope would be that we have a department or a group of people that their responsibility is this. (Barry)

there's no educational technologist in place. At the workshop we went to a few weeks ago, we talked and said, "If I wanted to do that, how would I know which technology is a good fit?" The guy's like, "Your educational technologist." I'm like, "No, we don't have that." (Leo)

The bridge between policy and practice was highlighted as key support need:

there's nobody I can go to sort of in-between that high level sort of strategic talk and that's actually in charge of implementing and doing that stuff. That's their role. (Barry)

I think all of us use Moodle, but sometimes I think that you'd maybe like to do more, but maybe the support infrastructure might not be there. (Gail)

I think a huge number of people here in particular don't understand what the technology is about because there's no core training for them to know what it's about. So they pick up bits and pieces here and there, and they go *to use something and then they're not using it correctly, if you know what I mean. (Audrey)*

Educational technology support was perceived as being decentralised in nature, based upon a reliance for knowledge sharing amongst academics:

…we're kind of learning, we're leveraging off what people internally, know (Kate)

The only training that I've gotten on online delivery was a colleague who out of the goodness of her heart, put a session on based on her experience rather than based on any formal training she had received. (Dorothy)

The frustration regarding a lack of technology training was compounded by the institute's focus on training for issues of legal compliance and governance. In some cases, staff felt that the types of training offered were ill-suited to the actuality of needs:

There is training going on, but I'm not 100% sure that the training that is going on is 100% relevant to the needs of the staff. For example, I did a 'How to Lift Boxes' training. Now, the heaviest thing I've got to lift is a book or a pen, which is totally inappropriate (Ben)

The institute's approach to support was attributed to the willingness of academic staff to operate within the constraints of available resources and within the boundaries of existing knowledge in the academic community:

I think because we've made it work. In some ways, we're our own worst enemy. We just get on with it and do it, so why spend money on something that's working. (Barry)

...you would expect that individual lecturers would push for training in particular areas as well. But then again, if they don't know what's there, they can't look for it. (Ben)

While the participants were critical of the lack of organisational change in support of academic needs, they gave recognition to the logistical supports provided by management. These included supports for workshop attendance, training seminars, continuing professional development courses, and conference fees. Middle management were generally seen to be supportive of technology and leveraged the resources and budgets available to them. In some of the disciplines, the provision of technology was seen as a form of endorsement and support:

...the head of department, if you need a tablet, or you're doing online there will be support. No, it brings in money, and they tend to, if you need a resource and make an argument, it tends to be given, it tends to be available. (Ciaran)

...I need some sort of equipment I can make a request of the head of department and put in a request for technology, and they will actually fund it, in that case. (Ben)

...he just said, "Listen, if there's anything you need for delivering whatever, just ask me, and I'll get it for you, if it makes your life easier." And we've got that from [named manager] as well. That's great. I must admit that is probably lost in all these discussions. (Barry)

However, not all disciplines experienced equitable access to technology resources. Participants in STEM disciplines such as computing and engineering reported a high level of technology provision:

Yeah, I have a 17-inch MacBook Pro camera and tripod and all those things have been cleared through. Particularly, the laptop was full spec Mac, which that was great. That absolutely was a big change. There is support! If you ask. (Barry)

Those academics working within other disciplines, particularly those in the arts and humanities, described struggles with management for access to technology. Megan believed that technology constituted a form of status, with some disciplines being perceived as more powerful than others relative to their access to technology:

I would think there would be a power thing that the different departments would know that there is nothing, that we have no technology skills in [discipline name], kind of thing. I'd say they're aware of that. (Megan)

Those in the arts and humanities also commented on the need to share scarce technological resources, even when the use of technology was essential to programme delivery:

They know that all of the staff, mustn't have laptops and things like that. Even for doing the webinars and all that, when I'm doing the webinars, [colleague] has a laptop she brings in here. (Gail)

During the course of her interview, Megan expressed surprise when learning that academic staff in other disciplines were provided with a range of technologies:

No. We've no laptops. Like staff laptops? No. I bring my own. No. No laptops. That was never ... Is that a thing!? (Megan)

This surprise turned to a sense of frustration when she contrasted her struggles to access technology against the experience of her new postgrad student who was provided with a laptop on the commencement of her studies:

> *Yet I was surprised. The students, postgrad student I have, as part of her research she was just given a laptop!* (Megan)

Despite the many criticisms of the existing support structures, several of the participants acknowledged a lack of voice and a failure to engage in dialogue around issues of support:

> *I think from a department point of view, I think we need to be making more noise. That this is the support we need to make this better. And maybe we are a bit of our own worst enemy because we just get on with it.* (Barry)

While Megan was deeply frustrated by her lack of access to technology, she admits to not actually asking for it:

> *We're not exposed, but I presume if we don't, like nobody's asked for any resources. I presume if maybe I went looking for something tomorrow that I needed, and I had an idea for it, I might be given it.* (Megan)

6.4. Technology as a site of struggle

This section of the findings will focus on the theme of struggle, a theme which is central to Bourdieu's thinking, with the social universe regarded as a site of 'endless and pitiless competition' (Wacquant, 1998, p.4). Within fields, struggles between power relations typically take place over resources or stakes and access to them (Jenkins, 2006). Sterne (2003, p.383) posits that technology itself becomes a site of struggle and is 'always implicated in a social struggle'. This section seeks to expand our understanding of struggle through subthemes of power, control, fear, and frustration. In examining these themes, the participants were asked to reflect on their individual struggles with technology, struggles with others over technology practice, and their perspectives on struggles over technology between various power relations within the institution. The data highlights struggle in managing student expectations, changing student demands, changing student behaviours, and changing demographics. Struggles with management for support and access to resources were also highlighted. Participants provided rich insight into the realities of technology use in a socio-cultural setting in which a variety of actors sought to shape, normalise and legitimise technology use in academic practice.

6.4.1. Changing workloads and issues of time

Discussions on the experiences of educational technology highlighted workload and time as factors in both the adoption and non-adoption of educational technology. For some, technology was seen as a way of reducing workload through efficiencies in communication, course organisation, grading and feedback:

> *Technology can free up the time. It frees up my time to allow me to do more one-to-one and give feedback. And that's a good thing. I mean I really enjoy putting stuff together too, so that benefits me.* (Donal)

> *Well, I did actually once, when a student was on placement in [place name], I drove the first time to [place name]. I just thought, "I've been twice along in the car. I've been supervised in the placement. I've seen it, I know he's there, I know what the supervisor looks like now." I said to them, "Look, can we do the second visit online? Can we do it on Skype?"* (Gail)

> *On the flip side, it does allow for much more efficient management of courses and so on, and that free up the lecturer's time. So, I think there's a yin and yang with both these.* (Paul)

Despite these potential benefits, all participants spoke about time and workload pressures associated with the take-up and use of technology. Fiona, Gail, Megan, Leo, Ben, Barry, Julia, Audrey, Donal, Duncan, Peter and Dorothy all make direct references to time pressures arising from other aspects of their academic roles, which acted as inhibitors to technology adoption. Time to attend training, to experiment, and to integrate technology into practice were all curtailed because of teaching load and other administrative duties:

> *I think you have to have a vibrant interest in doing things to keep moving forward with the technologies that are actually there. And I think people just see them as, "What's the point?" Too many hours to teach.* (Audrey)

> *Yeah. It just seems that it could grow into something very big. You're saying, "Well, this is X amount of hours of my time and I've got four other modules and I can't do that."* (Gail)

For Leo, growth in the number of technologies that academics use was seen as a further demand on his time:

> *There could be, yes. There's also the fear that, overload. That some academic staff might say, "Oh, Lord. I have to check my email." "Oh, God, I have to check the Facebook." "I better check that I put that up on Moodle for the students." And there's so many different things. And then physically carry their duster and their flip chart marker.* (Leo)

Those who have managed to integrate technology into practice experienced increased workloads. Online programme delivery was seen as particularly time consuming. Gail, Julia, Dorothy, Irene, Audrey, Donal and Kate reported significantly increased workloads arising from their work on online programmes:

The impact of coordinating this programme, and it's known, and it has been said, and I even raised it in the presentation at the congress yesterday, that a blended learning programme to coordinate takes a lot of hours, and a lot of effort... (Gail)

Well to be honest, for me, it's huge. I'm just working off of a contract, which is so many hours a week. I'm way beyond that every week. I'm Monday to Friday, every day here. I'm here during ... I'm here today, tomorrow, the summer I get ... I take two weeks off in August. (Julia)

Both Audrey and Dorothy highlighted managements apparent failure to implement new workload models that might acknowledge the additional effort required to utilise technology in academic practice:

The academic overheads are being ignored. Anything that's done with technology takes a great deal of time to set up. (Audrey)

So, my understanding is that here, online delivery is treated exactly the same as face to face and there's no additional time awarded for preparation or at least that has been my experience. (Dorothy)

Donal believed that any agreement on new workload models which might recognise increased academic workloads needed to be developed and agreed at a national[11] level:

[11] At the time of writing, the Teachers Union of Ireland (TUI) was in the process of balloting its members for industrial action due to its failure to secure 'a national agreement on the development and delivery of online and digital learning in Institutes of Technology and TU Dublin' see: https://www.tui.ie/news/national-ballot-on-online-and-digital-learning-%E2%80%93-institute-of-technologytechnological-university-sector.13641.html

Workload. If you don't enjoy it, you're not going to get into it, right? So, there needs to be a national recognition of the effort required to do it that way. It is huge, there's no question about that. (Donal)

Participants also spoke about the workload pressures resulting from increases in the amount of time required to prepare and manage teaching with technology. The creation of media content for use in teaching was seen to be particularly time-consuming:

It takes a lot of time to produce good quality video materials. You have it into the future, but in the initial phase, it takes a lot of time. I mean I've put a huge amount of effort into producing my materials, massive, way, way above anything that I'd be doing in here... (Donal)

However, some felt that the reusable nature of learning materials might eventually offer some payback in terms of efficiencies and workload improvements. For Peter and Duncan, an initial increase in workload was offset by longer-term gains:

So, there's an initial, I suppose, investment. You realise there's an initial investment in time in terms of the technology and recording video and setting up the digital learning objects, but once you do that, they become reusable and therefore it kind of opens up time for using the class time and face time for other things (Peter)

They're reducing my workload in the sense that once I have material completed and ready, I'm basically updating from year to year, to improve it or improve the technology content, or whatever, you know, to make the sound quality better. (Donal)

A final issue worthy of noting was the participants' sense of connectivity to their workplace through technology. Several participants spoke of their struggle to manage work life balance and the out of hours nature of technology. Fiona described technology as "*seeping into my working, my family life an awful lot more than I had envisioned*". She felt pressure resulting from a sense of being constantly connected to the institute in a state of being "*always on, always checking".* Ben speaks of technology as a '*big elastic band that no matter where I go, actually, I'm also replying to it'*. Peter talks about having to address his state of constant connectivity '*I've had to scale back on how connected I am to the institute*'. For Leo, this continual state of connectivity is part of the job '*It keeps me connected. Yeah. I feel it's my job, I'm being paid for it. And I see it that way.*

6.4.2. Fears

As previously outlined, participants were sceptical of what they saw as the organisation's 'hidden agenda', which sought out technology for the purposes of cost savings, growth, rationalisation, competition, and image. This scepticism was linked to a number of fears which may have inhibited the adoption of technology, instead giving rise to a culture of resistance and conflict. Fear of job losses and detrimental changes to employment terms were cited as concerns:

> *Jobs. Jobs, number one. (Audrey)*
>
> *Lack of jobs. Lack of, moving down to maybe doing hourly rates as opposed to having a full-time permanent job. (Ciaran)*
>
> *And there's questions there, around, "Could I potentially be redundant?" If I spent most of my time doing slides that could be delivered another way, my actual job that I'm paid for could be under threat.* (Gail)

There was also a fear that technology would change the nature of the institute and the type of educational experiences on offer. Specifically, there was some concern around the concept of the 'digital campus' and possible virtualised academic experiences:

> *I've always had the fear of the virtual university. Right? In terms of I know places in America where the virtual university has just suddenly appeared, and then people are just ... paid to write the lectures, and nothing goes with it. And to me, that's not education. I think they're great, I think online courses are fantastic, I think to up your skills, they're fantastic. But it's not education, it's skill.* (Audrey)

Kate, Ciaran, Duncan, Donal, Audrey, Irene, Barry, Leo and Gail all expressed concern about the strategic intent of the digital campus concept. Many of the participants held a cynical view of this particular strategic vision:

> *I think the talk about digital campus and is there any point in building another building because everything will be online... They talk about a digital campus, but in a policy context. I don't feel in practise I work in a digital campus. (Gail)*

> *Sometimes these terms are good PR* (Irene)

> *I mean just the sound, "digital campus," as long as it's more than Adobe Connect. That's not, to me, education, you know. (Donal)*

Participants link the concept of the digital campus to increases in online provision, massification, damage to the quality of the educational experience, damage to student interactions, outsourcing and job losses. It is viewed with a mix of cynicism, suspicion and mistrust, with few of the participants having faith that the new digital campus will be of benefit to academics.

6.4.3. Resistance and judgement

The fear of being perceived negatively as a result of the non-use of technology was a common discussion point raised by participants. Julia believed that open resistance would be met with an attempt to coerce academics back into the use of educational technology:

> *I think pressure would be put on them. I think they might be offered more extra training, or I think that's the root of it. It would be deemed as a lesson that's only ... You need extra support in it, or we provide you with that. But I think you could be coerced into it...* (Julia)

Fiona was concerned about the optics of non-use, which might be viewed negatively by management, students and peers:

> *I think from a work context it would be embarrassing to say that you don't use Moodle. I think if you're not using it- You look like a bit of a, a bit washed. I just don't think it looks good.* (Fiona)

Many of the participants spoke of the pressure to use educational technology and the difficulty of resistance. While there were no policy requirements regarding the compulsory use of educational technology, participants spoke of the power of the culture of educational technology and the varying perspectives which fed into a relatively uncontested dogmatic discourse of adoption and implementation. Peter felt that academics who offered counter-arguments faced undue negative consequences from colleagues and management alike:

> *And there is a culture here, as well, and this is problematic in this college that anyone who says something negative about using a new digital tool, it's "They're just conservative and you know they're ... " And they get shot down, and they get ostracised a little bit, which is completely wrong because they're completely valid in standing up and saying, "I'm not sure*

if this is a good idea. " The culture is too positive here about technology, I think. And I think we need to kind of maybe roll back a little bit. (Peter)

Donal was typical of those who adopted a pro-technology stance and saw an inherent logic in the use of educational technology. He was deeply critical of colleagues who did not share his enthusiasm for technology:

> *I kind of find myself thinking, "Well, I know it's your choice, but why in the name of Christ wouldn't you use it?" It's just an incredible way to deliver information to people and give them access to material and get stuff back from students.* (Donal)

The participants repeatedly spoke of a culture of observation and judgement. While academics appeared to judge each other for use and non-use of educational technology, there was also a sense among the participants that academic management perceived the non-use of technology as a signal of dissent:

> *They're kind of looking down on people who aren't using Moodle, without maybe even realising it's taking us ... Oh, you're not using technology. You're against what we want to do, as opposed to well, maybe it's just not suitable for what I'm doing.* (Audrey)

> *You'd have to read our policies. What would happen career-wise? I'd imagine I'd be called up for a discussion, like about the expectation of the institute, on lecturers and the contracts, as well. What does it say, and that.* (Julia)

> *I think if you were going in for an interview or a promotion and you were asked about Moodle and you said you didn't use it, I don't think that would help your career progression at all.* (Fiona)

This perspective was not common amongst all of the participants. While Ben expressed the view that academic staff would suffer from missing out on the benefits of technology, he felt that the non-use of educational technology would have a negligible impact on an academic career:

> *I'm looking purely within the confines of the [discipline] school. It's not going to be seen as a negative influencer in your career.* (Ben)

In opposition to this view, Fiona felt that the use of technology was a requirement and an expectation placed on academic staff and that non-use would be damaging to her position of employment:

> *I don't think I'd get my [academic] post renewed. I.... I don't think it would be good for my social capital, my reputation.* (Fiona)

While Fiona does not feel that the use of educational technology is directly monitored by management, she does feel that an open declaration of resistance would be unwise:

> *If I made a physical statement about resisting technology, I just don't think that would be...........that would be frowned upon.* (Fiona)

Barry and Audrey both acknowledged a culture of observation but felt that ultimately, academic autonomy would offer the individual some form of protection:

> *I think they are just left to their own devices. I'm not sure what it's like in the [discipline] department, in the [discipline] department, we're very much left to our own devices.* (Barry)

*But let's face it, we're in our own little fiefdoms anyway. Nobody really knows what goes on when you go into that classroom.... (*Audrey)

Peter was less certain of the existence of a culture of observation and appeared critical of a lack of formal oversight and quality assurance monitoring:

I could pick up a new technology. I could say it's the best thing since sliced bread. I could introduce it, and it could have a terrible impact on the students, and nobody would ever really know. I could do that naively, because maybe I don't know what the process is. (Peter)

For a minority of academics, the prospect of observation and oversight was unwelcomed to the extent that some appeared to make use of technology in a hidden way, a form of teaching ‘off the grid’ which was seen as a symbolic form of resistance to the imposition of technology and the monitoring of academic activity:

I know there's actually there's a few that either do their own thing outside of our systems, from maybe some of the fears that I mentioned before, or maybe Big Brother's watching type of fears. And they use their own systems, their own setups, or their own websites... (Ciaran)

Some people as a result, have created their own learning platforms which would be outside of the control of the college in that case, then. They would have done this in opposition to having Moodle imposed on them. (Ben)

New academic staff were highlighted as a group who were susceptible to being coerced into the use of technology. Tenuous employment contracts and poor contract terms were highlighted as factors that impaired any resistance from those new to employment in academia:

> *Newer people don't say no to anything because newer people don't have any job security, really being quite blunt. There's widespread abuse of temporary contracts, fixed term contracts in higher education and it's not remotely unique to this institution, it's throughout the entire industry. So new people don't say no to anything.* (Dorothy)

> *'Cause they don't have the.... you know their contracts are crap. They don't have tenure, and they're afraid to say anything.* (Donal)

Dorothy believed that 'patterns of compliance' were instilled in new staff, making it difficult to resist educational technology:

> *But I think the patterns of compliance that are kind of instilled in you while you're waiting for those kinds of breadcrumbs to come to fruition and so on, are hard to take. So I would think it would be very difficult to resist it.* (Dorothy)

While he lacked evidence to support his view, Peter believed that academic staff who had rejected technology were marginalised by peers and management:

> *Like I know one particular staff member who very much dislikes Moodle, refused to use Moodle. Thinks it's a terrible thing. But he's seen as kind of a crank. Has anybody ever really listened to them? ..... Because I think people who criticise it are seen in the negative light, and I actually think that it can be somewhat detrimental to your career, as well. I think perception about people here in this organisation is very important. If you're seen as not pro-technology and pro-X, Y, and Z, I think you do get categorised and maybe ignored a little bit. So, no real evidence of that. That's just my perception.* (Peter)

6.4.4. Power and Control

Participants spoke of the tensions which arose over struggles for the control of educational technology. Perspectives were divided into two broad categories; those who believed that the control of technology was in the hands of management and therefore undemocratic and imposed; versus those who viewed the use and non-use of technology as an academic choice, with little or no interference from management. Those that viewed educational technology as being imposed often referred to the influence of academic heads of department and schools:

> *I don't know. I have no idea. I would surmise that it comes from quite, quite high up and don't even think it's coming from kind of head of departments, head of school level. I think in some levels it is. So me being online this semester I think was largely head of department decision. But beyond that, in terms of kind of where the world is going, or where ITB going, I don't really know. I would surmise upstream and I would almost surmise to be honest, beyond ITB.* (Dorothy)

> *Well, it tends to come from the head of the department or the school down, actually as opposed to anything else.* (Ben)

Management influence over the selection and provision of technology solutions for academic use was also framed as a form of domination and control. Both Duncan and Ben highlighted the implementation of Moodle (a popular course management system) as an example of an imposed technology, insofar as they felt that academics had no opportunity for input into its selection or configuration:

> *There's other types of learning environments actually in there. Some might be more appropriate. I don't know, actually but that was imposed on us.* (Ben)

> *I don't think so, Daniel. Going back to Moodle 3.5, did we have any discussion on that? Did anyone say to me, "Here's features that you're gonna have."* (Duncan)

Dorothy, Kate, Donal, Peter, Julia, and Audrey, spoke about how educational technology was imposed upon academics through the mechanism of programme design. Dorothy recalled a programme design process whereby educational technology was put forward as key feature of the validated programme at the behest of management:

> *My understanding is that the need for [subject area] degree and the need for it to be blended came from above. Not the team and not necessarily the research.* (Dorothy)

Julia shared a similar experience and recounted an example of needing to introduce the practicalities of educational technology to a team of academics who had already validated an online learning programme under the direction of management:

> *Well, the fact that I had to go into a group of [discipline] lecturers and talk to them about what blended learning looked like when they'd already set the programme up, it gives the sense of, "Oh my God." ... But that programme was already set up!* (Julia)

The design process which mandated the use of technology in programme provision might result in subsequent operational pressures to deliver on the promise of technology use. Donal and Peter cited examples whereby academics have felt coerced into the use of technology as a result of programme design:

> *I have seen people being coerced into delivering materials via Adobe Connect ... When they weren't comfortable with it. I have seen a couple of lectures, I was delivering stuff and being told to deliver it because we have to have an internet, we have to have an online module, right in course. "This is the online module; you have to deliver it via Adobe Connect." And they weren't comfortable with it.* (Donal)

> *I think some staff feel under pressure to teach online, who may not be comfortable with doing it. You might say, "Well, all the online teaching typically is done as additional contracts.", but those additional contracts are not as optional as we believe them to be. I've seen coercion happen in that.* (Peter)

Interestingly, Peter felt that the language used by management inferred an expectation of technology use, even in the absence of specific policy or guidelines:

> *You can see this when new staff come in. In my own department, it's even in how managers will phrase, I suppose, a request. For example, I'm handing over a module to somebody who's just new in the door and the request from the head of department is, "Can you give them access to the Moodle page?", without first of all asking, "Is there a Moodle page? and, "Can you give them access to all the notes?". That's how it's phrased. So, that automatically for me was, "I should have a Moodle page." I suppose that is a big influence more than anything, just the language that we use in here is assuming that you're using technology* (Peter)

Counter to the discourse of management domination was the belief that power and control of educational technology resided with individual academics within the institution, resulting in a decentralised and 'bottom-up' culture of educational technology which has emerged in the absence of a priori strategy:

God, who's in charge of technology? [long pause] I think in terms of … I don't know! I don't think there's anybody driving strategy. I don't know if it's a … I think everybody's doing their own thing to meet their own needs and their own interests, but I don't know. I don't know if who controls it. (Gail)

I think it's gone the other way around. I think the lecturers are driving it as opposed to the institute. I think the institute is following the lecturers. I think the institute isn't really aware of what's going on online........at the higher levels. I'd be pretty sure of that. (Ciaran)

Some of the participants had no first-hand experience of management intrusion into the individual use of technology and pointed to a culture of technology use that appeared ungoverned and egalitarian:

I would have to say that it's very much left up to yourself. From any interactions I've had, nobody's ever said, "You have to use this." (Peter)

And to my mind, no, I can't think of anything that where it was imposed in a dictatorial way. (Leo)

But the nice thing is, nobody impedes you in doing anything here, and that's a very positive thing. I have never had anybody say to me, "Jesus, you're gonna do blended learning, oh, not sure about that." It's embraced. There's never been an issue. Nobody's ever said, "We don't want you using technology." Nobody's ever tried to influence in that way. It's very positive. (Donal)

During the interviews, questions around the democratic nature of technology tended to be answered from an academic centric perspective. Participants framed considerations of democracy in educational technology in terms of the power struggles between management and academia. Only Peter reminded us that students were also entitled to representation and voice:

> *Is it democratic? From a staff perspective, it's probably democratic in that if the majority will...if the majority says, "This is good", people will start using it and therefore it trickles down. If you take the institute as a whole, in that we have more students than staff, the students are never asked. So, therefore it's probably not democratic. The answer would be no for the institute as a whole.* (Peter)

6.4.5. Failure and Frustration

All of the participants spoke about failure and frustration arising from negative experiences with technology use. This provided an insight into the messy reality of technology use which offered a refreshing alternative to the utopian 'problem free' experiences frequently communicated in strategy and literature. Participants experienced a wide variety of failures and mishaps, which often resulted in doubts around one's efficacy and professional image. Ben and Fiona wondered if the failures they had experienced with technology were attributable to their lack of knowledge:

> *Very, very much so which then leads to a degree of frustration because if it doesn't work, you wonder why. Is that you? Or is it your lack of knowledge? Sorry, is it me or my lack of knowledge that's actually creating it?* (Ben)

> *Yeah, like I was posting something there and I posted the wrong file. And you do feel like a bit of an eeejit, and that's I think just lack of familiarity with it.* (Fiona)

Participants provided examples of technology failures that were outside of their control but which they felt reflected poorly upon them. Julia and Duncan felt that technology failures affected their standing with students:

> *I get disappointed when things go wrong and I feel that I'm not competent. Like the change in the Adobe Connect page, not being able to get on and sitting on that Tuesday night, knowing all the students were in the room and were typing out, "Are we in the right place?" And they couldn't hear or see me, I couldn't get on.* (Julia)

> *Notwithstanding that, it made me feel not professional, and, "Here we go again. The thing has gone down." It reflects on the college, and I'm an employee of the college, and it sort of reflects on me, as well.* (Duncan)

Julia also felt that technology failures affected her standing with her fellow staff members and described feelings of embarrassment when needing to seek help:

> *And I just remember my feeling when I first started using Moodle, and I remember genuinely having the thought that [support person] is really pissed off at me because I have to keep emailing. And feeling embarrassed by that. Do you know?* (Julia)

Experience of failure and frustration was not confined to the functional aspects of educational technology. Pedagogical failures also resulted in frustration for academics and students. Irene highlighted a programme that included online learning as a key facet of its design. Developed with the concept of 'digital natives' in mind, the programme was heralded as a new way to engage the modern, digitally engaged learner. Surprisingly for the team, educational technology was rejected by the students, leading to a sense of frustration for the academics involved:

we're also going into their digital space and meeting them where they spend a lot of their time, having these live online classes through Adobe Connect as well. But we found that they actually do better, and sometimes preferred……some of them did the traditional classes. That the online classes were not as popular as we thought they were going to be. So, for the digital natives who would be the degree people, em…. we have dialled back the number of online classes. Yeah. It didn't work as well as we thought it would work. (Irene)

In at least one case, the programme team were now remedying on the fly and, as Kate points out, having to retrospectively apply fixes to delivery and assessment:

So I think those are the kind of problems, you know maybe should have been anticipated. For sure they should have been anticipated, but they weren't. And so now we're here three years down the line kind of going, oh this isn't working. And we're kind of retroactively trying to fix it. (Kate)

Kate was mindful that the experimentation undertaken by these academics may have come at some cost to the students:

So I think that's really good. So we realised that we had gone down this road, it didn't work, and then it was changed. But from the perception of those students then, that was quite a pity, because they had gone through that, they had been the piggy, the guinea pigs that had gone through it, and it hadn't been a good experience, and they hadn't really enjoyed it, and then it kind of left a little bit of a bad taste in their mouth about the online delivery. (Kate)

Donal also recounted an attempt at using educational technology to support a blended learning approach in his module. He intended to provide materials to students to engage in self-study, using his timetabled sessions as a form of discussion and support. However, the student cohort quickly expressed concerns and began to struggle with the novel approach:

> *it was quite a few of them, and that really surprised me. So I kinda took a step back after that and I increased my level of direct interaction 'cause I was kind of getting a bit worried that maybe they were floundering.* (Donal)

Duncan experienced a similar failure with a cohort of students. This came as some surprise as his use of the socrative in-class polling app had been very successful with other student cohorts. Duncan attributed this failure to differences in the student profiles and their dispositions towards mobile technology. For him, it seems to have provided a valuable insight into the need to understand differing student demographics:

> *One of the lessons that I've learnt myself this week is that you need to be very careful with technology with students, because what works with one cohort won't work with another.* (Duncan)

6.4.6. Profile and visibility

Several of the participants made use of social media tools in their academic activity. Twitter, LinkedIn and Facebook were highlighted as mechanisms for sharing news and case studies with student cohorts:

> *I have a Twitter feed embedded, especially in my fourth-year stuff. Again, it's just for me to say to students, "I follow people that are relevant." If they tweet something interesting like a new report or a job vacancy or a conference or something of interest, you can keep up* (Gail)

But then what I did was I moved for a while to a mixture of Moodle and social media, because what was happening was, I would tend to ... You know there's lots of current affairs, lots of news items that you want to share with students. (Kate)

But what I have done is I've actually set-up lists. And so, in my management class I'm monitoring, say, management keywords, key trends, the Irish Times. And so, the students see a Twitter feed (Duncan)

Twitter and sites such as Academia.edu were also used for research activity. Both Liam and Peter had used Twitter for the dissemination and gathering of research:

So it might be tweeting about some piece of research that's just published. I've done that myself. (Liam)

The likes of Twitter, social media is fantastic for in the scholarship environment. Twitter especially. If you're doing, and if you're monitoring literature it saves of much time identifying certain authors. I'm kinda lucky, in my area they tend to be all active Twitter users. (Peter)

Many of the participants noted a sudden rise in their colleagues use of social media and viewed this new form of technology use with a degree of suspicion:

people sharing stuff, putting it up. Everything that goes on here now, every meeting, you pretty much see a tweet coming out of it at some stage! (Ciaran)

the content and what's been put up there, and the politics behind it. And I kinda find it a little bit inauthentic because everything is 'so great to be at', *'wonderful to be'..........'Delighted to be asked'. It's a little sugary and sweet for me* (Fiona)

sometimes I look a little bit suspiciously at some of the other stuff that's going on. But I'm not gonna name names or say anything else. (Duncan)

Social media use was linked to a growing culture of self-promotion. Ben felt that visibility was essential for career progression:

From a progression point of view, you have to have visibility. Certainly using online profiles to raise your visibility is very important. (Ben)

Fiona was advised by a colleague to '*get yourself on Twitter for career progression*' (Fiona). For Fiona, technology made her activity visible and offered an opportunity to influence the opinions of others:

Profile, visibility-maybe people will make their mind about you based on your Twitter feed. (Fiona)

Megan noted the influence of management in encouraging academic staff to engage in this new trend of online profile building and self-promotion:

You've got to put up your interest, your studies, your papers, your whatever. You've got to do the whole profile. That's what they want, so that somebody, when they log on, they know your interests and they know what you're doing tonight. That's a bit of work for me to compile those. (Megan)

For Duncan and Leo, this self-promotion and competition between academic units and individual academics was problematic:

So, there's a wee bit of that, you know. "Oh, look at what the Joneses are up to." "Look at what that department are doing, isn't that wonderful." And "Look at what that school are doing, and what that institute are doing." "Look at what they're doing over at that campus." So there's a wee bit of this comparing ourselves to each other, and that's not necessarily good. (Leo)

Now, I'm not making any judgements but sometimes I think that people might be using Twitter to advance their own personal agenda in terms of their profiles or what they're doing or what they're not doing, you know? (Duncan)

However, for Peter, this tool allows the academic the opportunity to bypass the hierarchical information flows from departments to senior management:

I never had a conversation with anyone about this until this week. Where....we kinda both acknowledged that to get on in here, you kinda have to be on Twitter a little bit. This is just something that's happened in the last year or so. It's a fantastic way to promote yourself above certain lines of management, to get access to the upper echelons. (Peter)

6.4.7. The Outlier Case – The Account of Julia

In closing out this section on struggle, I would like to draw the reader's attention to the case of Julia. Julia is somewhat unique in this sample of academics in that she had transitioned fully to online teaching and was no longer engaged in face-to-face teaching practice. During our conversation, Julia provided rich insights into the changing nature of her practice and her experiences. Like others, she had struggled with the use of technology and the need to alter her approach to teaching. Many other participants also shared her experiences of increased workloads and time pressure arising from the use of technology. What marks Julia as a case worthy of particular attention was her account of the emotional impact of technology use. For Julia, the totality of her transition to online teaching had been so dramatic that she no longer felt like a regular academic member of staff and expressed a sense of disconnect. She began by describing a sense of detachment and isolation resulting from her use of technology:

> *I feel disconnected from the institution.* (Julia)

This feeling of disconnect was linked to dramatic changes in her relationships with her students and her academic colleagues in the institute. While Julia was still a member of her academic department, there was a sense that her move to online teaching had rendered her relatively invisible to her department colleagues whose practices were firmly rooted in face-to-face teaching:

> *I think I'm in a different position, in that I don't see the colleagues I used to see, and I don't attend the course boards I used to attend, or the exam boards. So I feel, in that sense, I don't know, people just ... Colleagues come up, "Are you still at that online stuff?" That's how they see me ....* (Julia)

Julia described her transition from a well-known and much-loved academic, to someone who appeared to be no longer recognised on campus:

> *Like I ... When I lectured here, I loved it and I could walk across the campus and a big gang of students would run and arghhh [makes a hugs gesture]... And that's genuine, do you know what I mean? And walking across the campus now, I don't know anybody because I'm so long out of the face-to-face stuff.* (Julia)

This new form of online teaching had not removed all relationships and emotion from her experience of practice. She commented on the willingness of her online students to share personal insights and stories with her, which allowed her to develop a bond and a sense of the individuals she was teaching:

> *And saying that, though, Daniel, you do build the relationships. Like what I find with this programme, which is unique, in all honesty, to me, it used to happen on campus, but not as much, is the people are telling me their stories. Their personal stories.* (Julia)

While her experiences with this cohort of students had been broadly positive, there had been episodes of anger and abuse, which had impacted her wellbeing. She noted that students had frequently associated her with educational technology and its failings. This had resulted in unwarranted confrontations and angry exchanges with some of her students. Julia noted that some of the students "*get angry with me instead of the technology*" and as a result, she had "*taken some abuse*". This conflict had carried over into occasional face-to-face sessions for online students:

> *It is difficult at times. And I've had students shout at me in the classroom at the tutorial day assembly.* (Julia)

Julia repeatedly stated that she missed the interpersonal side of the teaching experience so prevalent in her prior practice. Whilst listing to her stories, I detected a sense of loneliness and isolation and as a result I felt the need to ask her a question that I did not ask of other candidates:

> Daniel: *Okay. Odd question, is it a lonely existence? Technology? A technology lecturer? Or a solitary existence?*
>
> Julia: *It can be, actually. It can be.*

This short response had a profound effect on me following the interview. In all of my engagements with educational technology, both in literature and in practice, I had never encountered issues of emotional impact. As a technologist, I had concerned myself with implementation and the discourses of affordance, access, efficiency, as well as metrics of adoption and usage. My own prior work as part of a research group examining longitudinal VLE usage had never come across issues of emotion. They were simply never visible in the quantitative data. Yet sat here in front of me was a colleague who had expressed a degree of loss regarding her sense of belonging, her relationships with colleagues, her relationships with her students, and her identity within her discipline. Julia was experiencing suffering. While I felt some responsibility for Julia's experiences, she did remind me that her current engagements with online learning were of her choosing and that given the choice, she had elected to continue with this form of practice.

Over time, as more academic staff transition fully into online teaching practice, we may find that Julia's experiences are somewhat unique, a once-off. Or perhaps the emotional impacts experienced by Julia are a signifier of things to come for her colleagues.

6.5. Conclusion

This chapter opened with an overview of the theme of 'the student and technology', which highlighted beliefs the participants held about their students and educational technology. The most prominent of these was a commonly shared belief in the enhancing nature of educational technology. A variety of beliefs linked to the theme of enhancement were communicated by participants and included: technology makes education *better*, technology *enhances* education, technology makes education more *accessible*, technology makes learning more *interesting*, technology makes learning more *active*, technology makes education *relevant* to the modern workplace, and technology *modernises* teaching and learning.

The enhancing nature of technology was linked to the conceptualisation of the student as a 'digital native' (Prensky, 2001) and a series of commonsensical ideas that framed technology as complimentary to the learning and lifestyle needs of the student. Belief in this pseudo-theory led to the use of assumptions in programme design at a collective and individual level. In some cases, these assumptions resulted in shortcomings in curriculum design and negative student experiences. While attempting to leverage technology in the interest of the student, participants acknowledged concerns regarding students' interpersonal skills, communication skills, and group work skills, with some questioning the logic of placing them behind barriers of technology. Shifting patterns of engagement and changing expectations around the use of technology resulted in the emergence of tensions between academics and students. These tensions were not helped by their separation through technology, resulting in varying degrees of anonymity and depersonalisation.

In discussing tensions, the participants also described technology as a contested space between academics and the institute. The participants in this study positioned themselves as users of technology for the perceived betterment of the student. This was set in contrast with perceptions of the institute's rationale for the use of technology. Individual imperatives for the use of technology for the advancement of the student were set against discourses of cost, rationalisation, competition, globalisation, brand and image. These schisms were widened by management's perceived failure to fully back and support the use of technology in academic practice. Shortcomings were reported with regard to governance, leadership, and support. For some disciplines, technology was seen as a form of endorsement with those in the arts and humanities describing a struggle for access to required technology.

The findings concluded with an examination of technology as a site of struggle. Participants highlighted issues of increasing workloads and time challenges arising from their use of technology. There was a sense of resentment of the failure by management to address this through appropriate workload models that might recognise the additional labour that is linked to technology use. Failure and frustration emerged as key subthemes with many of the participants experiencing irritation at the failings of technology and doubts over their efficacy and professional standing with colleagues. The section also outlined participants fears with regard to technology use, the most serious of which was a perceived threat to tenure and working conditions. Technology was linked to a reduction in the institute's reliance on academic labour and a potential future that may see a reduced number of academics serving the needs of an increased student population. Those who were guided by these fears or who failed to subscribe to the organisation's technopositivist culture were labelled and pressurised into technology use. Management played some role in this disciplining culture of technology in which struggles emerges around the control of technology and the curriculum.

The next two chapters will provide a discussion and deeper analysis of these findings. Chapter 7 will offer an examination of the findings leveraging existing literature, while chapter 8 will attempt to offer a deeper analysis by applying a sociological lens that uses Bourdieu's Theory of Practice (Bourdieu, 1977) as outlined in chapter 3.

CHAPTER 7 | Consideration of the 'state-of-the-actual'

7.1. Introduction

This chapter will offer a discussion of the data as presented in chapters 5 & 6. The approach to this discussion is guided by the primary aim of the research:

To explore the lived experiences of a sample of academics with regard to educational *technology, generating understanding of its effects on their practice and identity, exploring their beliefs as they relate to technology, and interrogating their understanding of how technology's use (and non-use) affects their educational setting.*

The chapter offers an analysis of the 'state-of-the-actual' (Selwyn, 2010, p.69), providing insight and understanding into the actuality of technology use at the site of study. Actuality is examined under the themes of (1) the use of technology in practice, considering the different contexts in which technology is utilised, (2) the effects of technology use, focusing on the effect of technology on the individual, and (3) the rationale for the use of technology, exploring beliefs and influences which guide technology practice.

The analysis will argue that technology is in widespread use at the site of study and has contributed to the alteration of academic practices. This claim runs contrary to commentaries that criticise low levels of technology adoption and academic practice change. This analysis also argues that the use of technology in academic practices may result in both positive and negative effects for the individual. Most notably, technology is linked to a language of 'learnification' (Biesta, 2004) and a culture of reification which packages and distributes academic knowledge for distribution and consumption. Technology is also linked with a destabilising of identity and role, resulting in challenges to conceptualisations of teaching and a reshaping of pedagogy. Finally, the analysis highlights a range of beliefs and influences which shape and guide technology practice. Discourses of enhancement, modernisation, and the economic imperative, are combined with folk pedagogies (Olson and Bruner, 2008) and pseudo theories. These align with the technopositivist academic culture at the site, which supports a logic of technology practice so strong that any deviation or critical challenge is seen as counter logical.

The chapter is the first of two chapters that will offer an analysis of the data. As discussed in chapter 3, Pierre Bourdieu's 'Theory of Practice' (Bourdieu, 1977) and a number of associated conceptual tools are used in chapter 8 to provide a deeper understanding of the 'why' of technology practice, seeking to offer an explanation for the actuality of use. The use of this conceptual framework allows for an examination of both structural and individual dimensions. The next chapter will offer an analysis of the field, the interplay and positions of actors within it, the forms of logic that legitimise practice, and the dispositions of individuals which guide practice.

7.2. The actuality of technology use in practice

Through interrogations of practice and lived experience, the research sought to understand the actuality of technology use, gaining insight into what academics actually *do* with technology. As highlighted in chapter 2, academia has been criticised for its apparent failure to fully utilise technology (Price and Kirkwood, 2014; Plesch et al., 2013; Conole, 2010; Blin and Munro, 2008; Selwyn, 2007; Kirkup and Kirkwood, 2005; Zemsky and Massy, 2004). In Ireland, the supposed gap between the promise of technology and the actuality of use has been highlighted in the critical commentaries of the national forum (National Forum, 2014; National Forum, 2015). However, the data from this study highlights a significant if somewhat varied and uneven use of technology in a number of contexts. Could it be that the widespread academic use of technology has at some levels 'become invisible' (Price and Oliver, 2007, p.24) due to its routine nature? Hannon (2013, p.169) highlights a need to address this lack of visibility through the interrogation of 'what happens in practice, that is, what practitioners do and how'. This discussion will offer further insight into what these participants 'do' with technology separate to any analysis or claims regarding the effectiveness of educational outcomes.

Linked to this is a consideration of the spaces and moments in which academic practices are actualised. The data shows that not only is technology being used extensively in practice, but it opens up new spaces and opportunities for practice through the removal of physical and temporal boundaries allowing for the extensification and intensification of work (Currie and Eveline, 2010). Ironically, technology that extends the space for work and the intensity of work has, in part, reduced these academics opportunities to develop their technology skills and practices. As a result, these participants engaged in a number of different strategies to inform their technology practice. These varying strategies will also be discussed.

7.2.1. What academics do with technology – the state of the actual

While academic practice is generally considered to consist of the three conventional elements of teaching, research and service (Macfarlane, 2011), these participants focused their accounts of technology use on the teaching dimension of their academic practice[12]. The participants identified themselves as teachers, acknowledging that their contractual roles and functions were orientated towards teaching provision. Early in each of the interviews, participants were asked to reflect on *how* they use technology and what they *do* with technology during the course of their practice. Their responses described an academic environment that featured a high degree of technology utilisation across teaching practice. The types of technologies adopted, the degree of use, and the adopted pedagogic approach, varied among the participants. A decision

[12] Three of the participants in this study did provide a brief commentary on the usefulness of technology for research and service, but the overall level of data gathered was deemed insignificant for analysis and commentary.

was taken to obtain some measure of the participants' utilisation of technology through an analysis of their accounts of use. The four categories of the SAMR taxonomy (Puentedura, 2006), as discussed in chapter 3, were deemed useful as a way to compare *task*-oriented accounts of technology use, i.e. what the participants *do* with technology and its impact on the teaching task. Each of the participants' accounts were analysed and classified against SAMR:

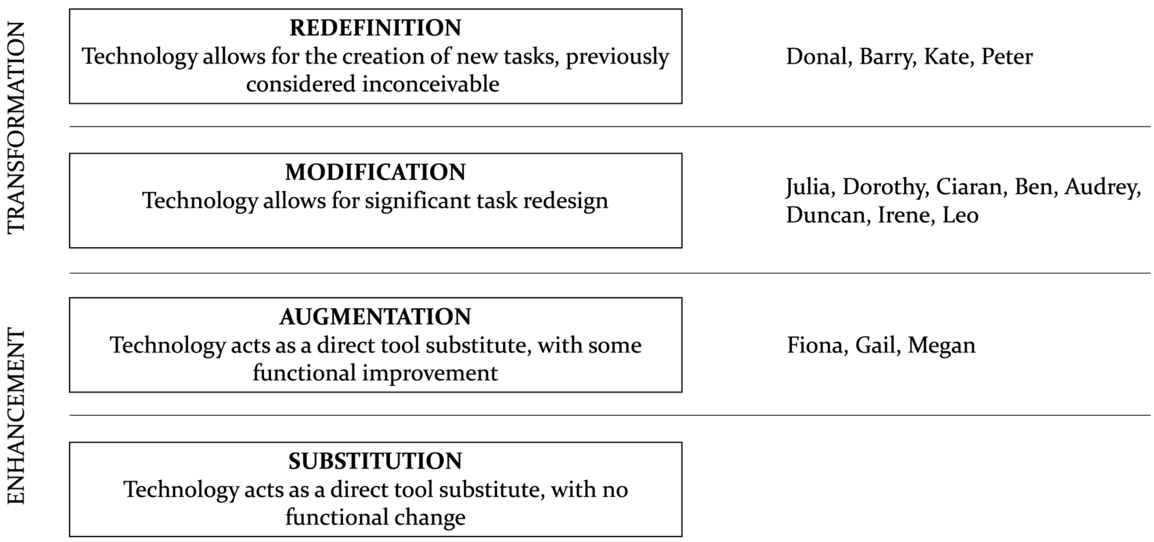

Figure 7 - Participant mappings against the SAMR model

At the *substitution* level, technology is used to replicate an analogue or manual task without necessarily enhancing it or providing for functional change. None of the participants' accounts of technology use fitted within this category. The most rudimentary forms of technology use within teaching practice were adjudged to sit within the level of *augmentation*. At the augmentation level, a functional improvement is provided, often in the form of productivity enhancements (Cherner and Curry, 2017). Fiona, Gail, Megan and Leo spoke about their use of the virtual learning environment for the dissemination of learning materials and the gathering of student assignments. While the dissemination of learning materials might be considered a form of substitution, the changes brought about through the technological management of assignments, feedback and grading, highlighted significant degrees of workflow change for these academics. At the *modification* level, technology provides a way to alter a teaching task. Each of the participants categorised at this level described significant redesigns of teaching tasks. For example, Audrey described the use of video assignments and the management of student project groups through technology. Duncan described enhanced approaches to the gathering and visualisation of student sentiment data through in-class polling software, while Dorothy provided insight into her redesign of an approach to assessment that enabled large scale submission, evaluation and feedback of student essays, something that was previously impossible without her use of technology. Finally, at the *redefinition* level, technology is used to enable 'novel tasks' (Hamilton et al., 2016, p.435), redefining the teaching task in a way that would not be possible in a non-technological context. Each of the participants accounts in this category demonstrated new and novel ways of approaching teaching using technology. For example, Kate had transitioned her module to a blended form of delivery through the utilisation of technology. Peter, Donal and Barry had also redesigned elements of their delivery, making extensive use of rich media in an attempt to provide student-centric learning experiences. In each of these cases, participants described technology as a key aspect in transforming the delivery and assessment of learning to the extent whereby any subsequent elimination of technology would have required a significant redesign of the novel approaches taken.

In analysing participant accounts against the four-level SAMR taxonomy, we gain some subjective insight into what academics *do* with technology. SAMR provides a *task* and *technology* perspective of educational technology use and does not make claims to account for pedagogy, contextual factors, learner outcomes, or the complexities and dynamics of teaching with technology (Hamilton et al., 2016). It's value in understanding the totality of technology impact is certainly limited, but its utility lies in its taxonomy which enables a comparative analysis of task change resulting from technology use. In this case, we may conclude that the participants did make use of technology in a variety of contexts and that the use of technology brought about differing degrees of change in the way teaching tasks were undertaken. These examples run counter to claims that academics are failing to integrate technology into teaching practice.

7.2.2. Seeing academics' practice as a multidimensional space

Practice as a social construction cannot be understood outside of space and time (Jenkins, 1992). While it is located in a space and time, it is not fixed to any given space and time and is capable of transformation and movement. Practice spaces are constituted and shaped through activity, with individuals shaping and fashioning the temporal and spatial boundaries that define them (Nespor, 1994). In this case, the participants defined three related and overlapping technology practice spaces:

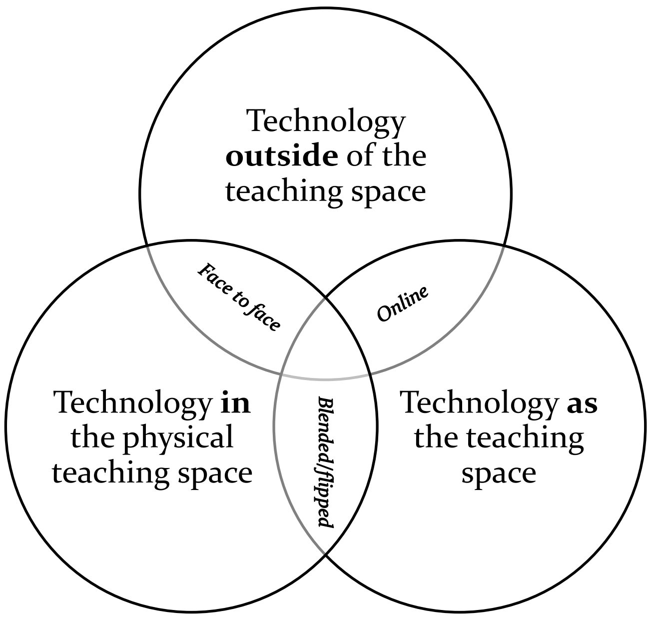

Figure 8 - Usage spaces for educational technology

The most commonly described use of technology could be described as use *outside of the teaching space*, that is, the utilisation of technology for the administration and support of teaching activity and student learning. Commonly cited examples of technology use within this practice space included the dissemination of digital learning materials, the enablement of electronic assignment submission, the provision of feedback and grades, and the facilitation of asynchronous communication. This practice space and the activities carried out within it, functioned as a foundational space to support both face-to-face and online teaching practice.

Participants who spoke about their teaching practice in the context of the online setting, framed technology *as the teaching space*. In this space, the traditional physical setting for face-to-face delivery was replaced by various technologies such as online classroom systems and synchronous communication tools. These technologies were layered on top of the technologies used *outside of the teaching space* to provide a workspace for academics and a learning environment for students that was predominantly reliant on technology.

The third and final practice space made use of technology *in the physical teaching space,* that is, the face-to-face classrooms and lecture halls of the campus, spaces which are so often seen as iconic symbols of the non-digital pre-networked academy, representing traditional approaches to education (Gourlay, 2012). Perhaps unsurprisingly, participant accounts suggested a low level of technology utilisation in campus-based teaching spaces. Accounts highlighted concerns with the physical arrangement of teaching spaces and their unsuitability for technology use, as well as perceived low levels of technology ownership among the student body.

The data shows differing levels of technology utilisation across these various practice spaces. Those who are proficient with the use of technology were often forced to set aside its use in the campus teaching setting. In discussing this, Ciaran highlighted a key tension between a desire to adopt technology and the structure of the academic contract:

> *It's hard, you're still......the fact is that this is what you're paid to do, and you're paid, our schedules at the moment are to be standing in the classroom for two hours.* (Ciaran)

Educational practices are not simply conditioned by relations of power, they are constitutive of them (Nespor, 1994, p.20). In this instance, management power imposed a differentiation between face-to-face teaching and other forms of academic practice. An educational sector that bemoans a lack of radical technological-driven transformation of practice continues to locate academics in performative face-to-face teaching settings that are not conducive to technology use. Under these conditions, management control space and time, and it is little wonder that the participants highlight a sense of increased agency and independence with regard to their use of technology in the practice spaces outside of the norm of timetabled on-campus teaching. Oblinger reminds us that 'Spaces are themselves agents for change. Changed spaces will change practice' (2006, p.1.1). Perhaps the management domination of space and time requires greater scrutiny as part of critical commentaries on academic failures to transform practice through technology.

7.2.3. Informing academics' practice

The data highlighted a perceived deficiency in the supports and continuous academic development opportunities available to participants at the site of study. Time and a lack of availability to engage with a range of formal training opportunities were cited as the primary inhibitors to informing practice. As a result, participants leveraged a variety of other strategies for informing practice, the most common of which was informal learning through colleagues and networks. While formal academic development opportunities for technology skills development are almost ubiquitous in academic institutions, little attention has been paid to informal learning and the process by which academics socially co-construct and share knowledge (Rienties and Hosein, 2015). In this case, informal learning played a far more significant role in informing practice than formal learning. This finding is congruent with the observations of Boud (1999), who posits that informal interactions with peers are the predominant ways of informing workplace practice and suggests that academic development should be conceptualised as a practice of peer learning. Eraut (2007) also posits that learning in the workplace can occur informally and socially, involving the sharing of personal experiences and tacit knowledge. Participant strategies for self-development through informal learning included peer observation, working alongside others, consultation, and experimentation. Learning through consultation with fellow academics relied on the individual's ability to build relationships with knowledgeable peers and to be able to solicit time from them to assist in practice development. This was somewhat problematic when technology expertise was located in a different discipline or organisational unit.

Participants sought out knowledge related to the practicalities of technology use and knowledge relating to the norms of technology practice. Participant approaches were in the main, guided by and validated against 'shared knowledge and established conventions for practice' (Fenwick et al., 2012, p.4) as they existed within disciplines at the site of study. Interestingly, the data highlights a preference for the acquisition of knowledge as it relates to the 'how' of technology as opposed to the 'why' of technology, with participants focusing on considerations of technology over considerations of pedagogy. These findings are similar to those of Singh and Hardaker (2017), Georgina and Olson (2008), and Eichelberger and Leong (2019) who noted that academics do not learn about technology in isolation, and instead often leverage the support of individual colleagues and peer groups.

It was also notable that research and other published forms of evidence played no significant role in informing practice. Participants were aware of the existence of educational technology research but appeared disinterested in an engagement with it. This finding is consistent with the observations of Price and Kirkwood (2014) who note that evidence has only a partial influence upon practice, with academics preferring to consult peers and other internal sources of expertise.

These findings have significance for those who seek to inform practice and to promote technology adoption in Irish higher education settings, suggesting that increased emphasis on the social development of practice (Singh and Hardaker, 2017), including the development of communities of practice and the enablement of peer knowledge sharing (Boud and Middleton, 2003; Boud, 1999) may play a significant role alongside formal learning opportunities. The failure of academics to utilise research to inform teaching practice is not unique to the domain of educational technology (Finelli et al., 2014; McIntyre, 2005; Kennedy, 1997), nor is it a recent phenomenon (Dewey, 1904). Korthagen (2007) posits that prior knowledge, preconceptions, and beliefs have more influence over academic practice than published research. The research-practice gap should be viewed as a 'complex and differentiated phenomenon' (Vanderlinde and van Braak, 2010, p.299), with a multitude of factors contributing to the continued disregard of research as an influencing force over practice change. Biesta (2007) suggests that the failure of research to alter practice may be in part due to the broadly instrumentalist nature of educational research. This position has relevance to educational technology research, which is accused of being overly instrumentalist in its thinking (Kirkwood and Price, 2014; Oliver, 2011) and lacking a critical distance that Biesta suggests may benefit both practitioner and researcher.

As highlighted in the findings, some participants were comfortable in adopting an experimental approach to learning about technology. The success of exploratory play approaches (Somekh, 2008) was informed by a combination of practitioner reflection through trial and error, coupled with feedback from peers and students. Little evidence was provided as to the consideration given to the consequences for staff and students should these experiments result in failure. This finding is similar to the observations of van der Rijst *et al* (2019) whose qualitative study of the teaching practices of eleven University academics noted the importance of experimentation in academic practice development. Again, social and experimentational forms of learning are deemed to have greater impact that formal learning opportunities and evidence from research.

7.3. The effects of educational technology use

Educational technology research has been accused of adopting an overly instrumentalist perspective of technology (Hamilton and Friesen, 2013; Selwyn, 2010), focusing on technical issues of machine and learning while neglecting consideration of the potential effects on the academic user. The data highlighted many notable effects of technology use, ranging from changes in individuals' conceptualisations of teaching to negative emotional experiences that impacted the individual and their adoption of technology.

7.3.1. Academic workload and intrusions into space and time

While the incorporation of educational technology into practice has been shown to increase academic workload (Watty et al., 2016; Gregory and Lodge, 2015; Tynan et al., 2015), this is not the experience of all of the participants in this study. Some participants using educational technology reported improvements in aspects of their workload. These improvements were achieved through the utilisation of technology for assessment, student communication, and course management and are congruent with a range of studies that have demonstrated gained efficiencies in the *administration* and *management* of student learning and assessment (see Devitt and Brady, 2018; Bennett et al., 2017; Whitworth and Wright, 2015; Atkinson and Lim, 2013; Lonn and Teasley, 2009).

There exists a notable division between this form of technology use and the use of technology in the *delivery* of learning. In particular, the generation of blended learning materials and the use of technology for online teaching were associated with increased academic workload. The creation of content for blended learning was seen to be particularly time-consuming. Estimating the time to develop blended learning is problematic. One study of interest is from Chapman (2013) who examined benchmarks for blended learning development in industry. That study concluded that the development ratio for blended learning was 49:1, meaning an investment of 49 hours of labour to create 1 hour of blended learning. This ratio increased to 69:1 for new content and decreased to 22:1 when repurposing existing content. Thus, it appears that the decision to use technology in blended learning becomes a dilemma of investment, insofar as the academic must weigh up the required short-term workload increase against potential longer-term time savings offered through the reuse of materials. While two of the participants in this study spoke about the longer-term gains achieved through their reuse of blended learning content, the development of this content required a significant front loading of workload. The academic must consider the likelihood of changes to the curriculum, changes to the subject matter, the risk of subject allocation changes, and the risk of technology obsolescence. As with blended learning, participants noted an increase in workload associated with their delivery of *online* learning. Literature suggests that teaching on online and distance education programmes negatively impacts academic workload (Kenny and Fluck, 2017; Bezuidenhout, 2015; Gregory and Lodge, 2015; Tynan et al., 2015; Bolliger and Wasilik, 2009).

It was evident that these participants were frustrated by the lack of an academic workload model which might recognise changing workloads associated with technology use. Kennedy *et al.* (2015) and Laurillard (2006) are critical of the absence of workload models that might give recognition to the value and commitment given by academics to this form of labour. In Ireland, the nationally agreed academic workload allocation model does not recognise the workload associated with technology use and instead crudely divides notional hours between research, teaching and administration. The HEA 2014 review of academic workload allocation demonstrates a sectoral failure to adequately address the workload associated with the use of educational technology. This effectively forces academics who use technology to take on the burden of the additional workload 'out of hours'. These findings are congruent with the 2020 Irish National Digital Experience (INDEx) Survey (National Forum, 2020) in which academics working in the Irish Higher Education sector describe a lack of time and appropriate workload models as a barrier to technology adoption. The omission of any consideration of technology in academic workload models is mirrored in studies of universities in the UK (Walker et al., 2018) and Australia (Tynan et al., 2015), pointing to a widespread refusal to acknowledge this form of labour, the time it takes, and the cost where it to be paid for by higher education. Indeed, the sector's failure to implement appropriate workload models might reflect an unspoken acknowledgement that the use of academic labour in the delivery of varying forms of learning through technology won't allow for a 'balancing of the books'. Instead, such workload models may expose a deep schism between the pedagogical promise of technology and the economic reality of use (Noble, 2002).

The pushing of technology to the 'out of hours' margins of academic work has furthered the blurring of the boundaries between work and non-work. While the accuracy of retrospective perceptions of academic workload and claims to increased workload may be open to some degree of challenge (see Kyvik, 2013; Tight, 2010), there is little doubt that these participant accounts demonstrate a struggle to disengage from work, in part due to the ubiquitous presence and connectivity of technology. Technology makes it increasingly difficult to separate oneself from academic work (Currie and Eveline, 2010; Heijstra and Rafnsdottir, 2010) opening a space of 'academia without walls' (Gill, 2009). The phenomenon of technology impacting on work-life balance is not limited to academia (Nam, 2014; Wright et al., 2014; Duxbury and Smart, 2011), and the use of technology has blurred the divides between the traditional spaces of work and personal life for employees in many parts of society. While not unique, these accounts do illustrate participant perceptions of work-life conflict brought about through their use of educational technology. They also provide further evidence of the impact of technology on their work, changing both the time and spaces in which academic work is undertaken.

7.3.2. Self-confrontations and pedagogic shifts

The data highlighted a number of instances of 'technology before pedagogy', that is, implementations of technology which primarily focused on the consideration of technology with scant attention paid to pedagogy (Glover et al., 2016). This is perhaps somewhat symptomatic of a field of educational technology which pays insufficient heed to considerations of pedagogy and models of teaching (Castañeda and Selwyn, 2018; Jaffer, 2010), instead assuming that existing pedagogies will 'fit' technological implementations or technology itself will result in positive pedagogical change (Torrisi and Davis, 2000). All too often, educators place emphasis on the replication through technology of the experiences of face-to-face teaching and in doing so, fail to recognise the complexity of pedagogy (Bayne et al., 2020). Of course, pedagogy cannot be simply added or appended to educational technology post-implementation (Kinchin, 2016), and academic staff who seek to gain optimal benefit from the use of technology should be well versed in the scholarship of teaching and learning (Kirkwood 2009). In this instance, participants did not exhibit a firm grounding in the scholarship of teaching and learning, and as previously highlighted, linked a number of folk-pedagogies (Olson and Bruner, 2008) and pseudo-theories to their use of technology. Many of their uses of technology appeared to be based on the affordances of tools rather than sound pedagogical rationale. Particularly noteworthy, were the participants assumption that the pedagogy of the classroom would translate to the online environment. The assumption of taking one's place at the top of a packed virtual lecture hall was unexpectedly replaced by '*talking to a screen in an empty room*' (Ciaran), '*speaking to the abyss*' (Dorothy), and '*talking into the darkness*' (Kate). Feelings of disconnect from their students, low levels of student interaction, and a sense that their approaches were failing prompted consideration of alternative pedagogic approaches. These experiences forced participants to reflect upon their tacit knowledge of teaching, pedagogy and programme design and to seek new ways of effective teaching using technology. In most cases, this resulted in more student-centric forms of online teaching and a decentring of the academic from the traditional lecturing role.

Similar to the findings reported by Peruski & Mishra (2004), technology acted as a catalyst for reflecting on existing classroom pedagogies and practices. Several participants questioned the validity of their longstanding approaches to classroom teaching and provided examples of utilising technology to alter their approaches. Kates question of '*who needs to hear me talking for two hours?*' was indicative of the sentiment of a sample of academics who were challenged in their role and identity as gatekeepers and purveyors of information, a role which can in part be fulfilled through technology. This fundamental questioning of the academic role and its centricity to the learning process appeared to result in a shift towards more constructivist teaching methods. The 'flipped' classroom, and other student-centric approaches were adopted in response to the participants' use of technology. These findings are congruent with the longitudinal study of McShane (2004), who noted that academics developed a 'confronting reflexivity' as technology transformed planning and teaching into a more '(self-) conscious activity'.

While policymakers may criticise higher education for its lack of technological change, the data from this case suggests that technology played some role in disrupting tacit assumptions and longstanding practices relating to teaching and learning.

7.3.3. Emotional impacts

The acceptance of technology as a constitutive element of everyday life, wrapped up in the cultural practices of production, distribution, and consumption, warrants a greater consideration of the affective underpinnings of its use (Hillis et al., 2015). Recent years have seen an increasing interest in the affective dimensions of wider technology use (Serrano-Puche, 2016), and yet despite this growing interest, empirical research into the affective dimensions of the academic use of educational technology is somewhat lacking. Educational technology research which considers affect has been very much focused on the experiences of students (see O'Regan, 2003; Zembylas, 2008; Cleveland-Innes and Campbell, 2012; Reilly et al., 2012; Symeonides and Childs, 2015; Calvo and D'Mello, 2011; Henritius et al., 2019; Tettegah and McCreery, 2015; Paasonen, 2015). Locating studies that examine the affective dimensions of technology use among faculty in higher education is deeply problematic. This is somewhat surprising given that emotional labour is recognised as a key facet of educator practice (Berry and Cassidy, 2013; Bellas, 1999; Zhang and Zhu, 2008). However, the broader topic of emotional labour in higher education suffers from a lack of attention (Mendzheritskaya and Hansen, 2019; Hagenauer and Volet, 2014; Postareff and Lindblom-Ylänne, 2011; Quinlan, 2016), with many studies having predominantly been conducted in face-to-face settings as opposed to digital contexts (Nyanjom and Naylor, 2020). Castañeda and Selywn (2018) are critical of this lack of attention, and suggest that emotional experiences may influence the values, beliefs and behaviours of faculty, and therefore warrant a greater level of scrutiny. Ellis and Tucker (2020) highlight the importance of studying the affective dimensions of technology and posit that the analysis of digital technology use through the lens of emotion allows for a greater 'breadth and depth of digital activity to be explored' (Ellis and Tucker, 2020, p.1).

In exploring the digital activity of academics, Bennett (2014) highlights the importance of considering technology's emotional effects and asserts that the adoption of technology is not merely a technical change but rather a change in one's practice and teaching style that constitutes emotional work. Emotional work and the emotional energy involved in the use of technology was evident in the accounts of participants who described their experiences of technology in emotional terms. Megan and Kate spoke about feeling *stupid* with regard to their technology use. Irene and Duncan spoke about feeling *stress* when their technology use did not go to plan. Feelings of educator stress and anxiety brought about through the use of technology are not uncommon (Fernández-Batanero et al., 2021; Nyanjom and Naylor, 2020) with 'TechnoStress' (Weil and Rosen, 1997), a form of ICT induced stress (Ayyagari et al., 2011), being increasingly linked to the use of educational technologies (Penado Abilleira et al., 2021; Li and Wang, 2021; Jena, 2015). Fiona, Irene, Duncan and Julia spoke about a sense of *embarrassment* and feeling *unprofessional* in front of their students when technology failed. This data is consistent with the observations of Howard and Mozejko (2015) who noted that educators may feel embarrassment, shame, and a sense of a loss of control when experiencing issues and failures with technology. The account of Julia was also laden with expressions of emotion, the most powerful of which was her expressed sense of *loneliness* brought about through her use of technology. Julia linked her use of technology to feelings of *disconnect* from the institute, her colleagues, and her students. She also described *confrontations* with angry students and the *stress* of an increasing workload and diminishing annual leave. Her account bore some parallels with the findings of McIntosh (2010), whose small-scale phenomenological study of e-teachers' experiences highlighted feelings of 'disempowerment, isolation, vulnerability and frustration' which impacted detrimentally on their sense of self, their interactions with students, and their self-efficacy (McIntosh, 2010, p.17).

Technology's instrumental nature and our technical focus on change may make emotional experiences like these easy to discount or ignore entirely. Researchers may underplay the relevance of emotions, yet they are a powerful influence over technological adoption and may result in 'emotional blockages' to technology use (Somekh and Davis, 1997). These participants' negative emotional experiences may constitute a second-order barrier (Ertmer, 1999) and may influence the individuals longer-term approaches to adoption (Venkatesh, 2000). While negative experiences may impact one's well-being and emotional state, they may also impact the academic's sense of identity and professionalism. Jenkins postulates that we identify ourselves 'in the internal–external dialectic between self-image and public image' (Jenkins, 2014a, p.20). Participant feelings of foolishness and failure (self-image) and their sense of embarrassment and unprofessionalism in front of peers and students (public image) highlight the potentially destabilising effects of technology on participant identity and their sense of standing within the academic community. These experiences and accounts of struggle are congruent with the findings of Bennett who noted that academics may 'carry the can' for the failings of technology and may experience a high emotional cost in making use of technology in practice (Bennett, 2014).

Thankfully, not all of the emotional experiences of participants could be categorised as negative. Positive emotions and experiences also appeared to play a role in the adoption of technology. Leo, Audrey, Ben, Donal, and Duncan all framed their use of technology in terms of *love* and *enjoyment*. Duncan describes himself as '*enthused and excited*' and having an '*insatiable appetite for using technology*' (Duncan). Donal states that '*I love building the stuff that I build*' (Donal), while Ben views technology as a way to stop him from '*getting bored with the old stuff*' (Ben). Donal highlights the intrinsic and extrinsic motivations which drive his technology use '*But the reason I do it is twofold, so the student can benefit and so I can enjoy it.*' (Donal). These participants described enjoyment, a deep sense of satisfaction and, in some cases, pride relating to their use of technology. Venkatesh (2000) highlights the importance of 'computer playfulness' and 'perceived enjoyment' in the acceptance and adoption of technology. While participants acknowledged increased workloads, failures and frustrations, the playfulness and experimentation described by several of these participants highlighted a powerful intrinsic reward for the time and effort invested. Literature examining technology adoption often concentrates on addressing the development of educator change variables such as forms of knowledge, self-efficacy, and pedagogical beliefs (Ertmer and

Ottenbreit-Leftwich, 2010). The importance that these participants place on their emotional experiences points towards an opportunity for those involved in academic development to consider the fostering of experiences that might seek to afford opportunities for technological playfulness, enjoyment and intrinsic reward. Such an approach may offset some perceived barriers of workload and risk associated with technology adoption.

7.3.4. Movements towards learnification and reification

Gert Biesta's seminal publication on the 'learnification' of educational discourse and practice (Biesta, 2004) suggests that the language of *education* has been replaced by a language of *learning* which reduces emphasis on the broader experience of education. Learnification links teaching to the support of learning and reframes education as a means to provide *learning* experiences. These efforts can only be supported by a new language and a way of speaking about education. The language of educational technology has been linked to the discourse of learnification, in part driven by the instrumentalist nature of technology and a surrounding postmodernist rhetoric (Bayne, 2015; Haugsbakk and Nordkvelle, 2007). Terms such as 'online *learning*', 'flexible *learning*', and 'any time any place *learning*', are common in educational technology literature and discourse. The term 'educational technology' is pitted against the competing terms of 'technology enhanced *learning*', 'computer-based *learning*', and '*learning* technology'.

A word frequency analysis of the participant transcripts highlighted a clear preference for the use of a language of *learning* over a language of *education*. Participant use of the language of *education* was linked to descriptions of the wider education system, educational networks, and external policy actors which influenced the institution. Education was overshadowed by a participant lexicon which conceptualised the student experience as one of *learning*. The use of technology was almost exclusively associated with the process of learning provision. Technology for learning was linked to the provision of *access* to learning, the *support* of learning, the *enhancement* of learning, and the *management* of learning. This use of language suggests that these participants have been captured by the wider discourses of learnification and see technology as a component in the individual student's learning experience.

The discourse of learnification was further highlighted by participant accounts which spoke of a reification of academic knowledge for the benefit of student learning. Participants spoke about transforming their 'objects of labour' (Allmer, 2018), their academic knowledge and experiences into something to be shared and consumed through technology. Learning materials in digital form were viewed as a representation of the module's educational experience and value, "*It's almost technology has become the course*" (Ben). Participants used a language of 'content' in which their academic knowledge was made material through their Moodle pages, their course notes, their 'slides', their videos, and other consumables which they had created or curated. These materials were published and shared with others and may constitute a part of the 'public image' of the academic (Jenkins, 2014a, p.20).

In one sense, the reified knowledge they produced was seen as a reflection of their academic identity and professionalism. As previously highlighted, several of the participants expressed a sense of pride over the appearance and form of these representations of knowledge. For others, there is a concern that the quality of the materials they produced may have reflected poorly on their academic image. Concerns around the quality of produced 'content' and 'product' coupled with comparisons against external sources of content such as YouTube or Lynda.com, suggested an acceptance of the 're-description' of education in economic transactional terms, whereby the individualised student assumes the role of the consumer and the academic and university are recast in the role of the provider of a product or service (Biesta, 2004). Participants seem to accept the consumer student as a facet of modern education and see little threat from their own actions which may contribute towards a wider culture of commodification. Only Dorothy "*We are commodifying education!! I do think it's becoming a commodity*" (Dorothy), and Kate "*I think if you go too far down the road to technology, you end up being Lynda.com*" (Kate), express any concern towards an unchallenged move towards digitisation. For Duncan the culture of digitisation and reification offered a unique opportunity to the institute. He adopted a distinct but noteworthy neoliberal stance in relation to the commercial opportunities afforded through the digitisation of academic knowledge:

> *I said, "I think the great opportunity we have here, and any institution has, is to become the Netflix of academia. That's the challenge!"* (Duncan)

His stance can be described as a form of 'commodity fetishism', a reorientation of education away from the social relationships between people, instead moving towards relationships between 'things' in which the academic becomes a producer of commodities for the consumption of the consumer student (Naidoo and Jamieson, 2005).

In a climate of increased marketisation of higher education (Brown and Carasso, 2013; Lynch, 2006) and a move towards student consumerism (Molesworth et al., 2009), education is increasingly mediated through technology. Increased digitisation and unbundling of provision (Czerniewicz et al., 2021) normalises these participants use of technology as a response to the 'having' needs of the consumer student and the 'being' needs of the market-oriented institution (Molesworth et al., 2009). Technology offered a logical mediating space between the needs of the academic and those of the student, institution, and market. The 'disintegration and distillation of the educational experience into discrete, reified, and ultimately saleable things or packages of things' (Noble, 2002, p.28) becomes a norm of practice, a technologic which masks the ideologies and cultures behind reification and the risk of a deskilling or devaluing of the academic role (Gur and Wiley, 2008).

7.3.5. Shifting our identity and challenging our place

Issues of identity emerged during the examination of the data, and to assist in my understanding of identity, I adopted James Paul Gee's definition of identity, which he describes as "being recognised as a certain 'kind of person,' in a given context", noting that individuals have multiple identities connected not to their 'internal states' but to their performances in society (Gee, 2000, p.99). These participants' academic identities, which are both discursive and institutionally defined (Gee, 2000), are not fixed but instead evolving with their lived academic and personal experiences and developing narratives (Clegg, 2008). As previously highlighted, these participants' narratives have been shaped by lived experience, discourses, and ways of working that communicate the academic's somewhat traditional identity as the creator and purveyor of knowledge within academic centric teaching environments. The participants recognise themselves and are recognised by others as 'lecturers'. Their 'performances' as Gee would put it, are for the main part, conducted in classroom settings in front of students, an act which Ben described, quite literally, in performance terms:

> *Because if you think of it, lecturers by their very nature are thespians. We stand up and we act…* (Ben)

This image of 'the sage on the stage' (King, 1993), of standing up, of performing, of communicating information to the room while on your feet, was the dominant metaphor used by these participants to describe their identity. Their identity was synonymous with the immediacy of the classroom and had been shaped by their work in the classroom. In many ways, the participants privilege the bounded space of the campus and link 'embodied proximity' (Bayne et al., 2020, p.238) to the authenticity of the educational experience. The participants' reflections on their practice and their use of technology highlighted concerns around the role of technology as a destabilising influence on identity. Many of the participants who had experienced online teaching struggled with issues of identity. Ben contrasted the interactive and thespian nature of his role with his disappointing experience of online teaching:

> *If you look at the delivery in a lecturer, of how you deliver material, of where you bring in your body language, the tone of your voice, you dramatise things, you leverage things purely in terms of body language, in that case then. And you look at how we deliver for something like over Adobe Connect, where you've stripped out all the personality and you've stripped out all the body language and you just have your PowerPoint slides and you talk monotonously for probably two hours at a go. That's horrendous. (Ben)*

Participants described the erosion of identity and 'being' with the students in the online environment as academics were disembodied, sanitised, and stripped of their individuality and character through technology. Participants reported feelings of disconnect from their students and staring into an empty 'abyss' when taking to screens and moderating online teaching sessions. Concerns were raised about their ability to tell personal stories and recount lived experiences for fear that these would be communicated or distributed outside of the teaching group, potentially damaging their standing and identity. These accounts mirror the findings of Hanson (2009) who noted that academics teaching online through technology felt displaced as knowledge experts, felt disembodied and disconnected from students in online environments, and perceived technology as a threat to their ontological security. McShane (2006) studied changes to academic identities as they moved towards becoming an online lecturer and claims that the identity of the 'performing/caring/directing' lecturer (McShane, 2006, p.x) does not adapt well to the online setting. She speaks of 'grief and mourning' and 'moving on', and in time, these participants may discover that their cherished identities are not compatible with new online platforms and ways of teaching.

7.4. Rationale for the use of Technology – Beliefs and other Influences

A complex range of factors influences faculty adoption of technology, including relative advantage of use, ease of adoption, self-efficacy, attitude to change, agency, conceptions of teaching, and management and organisational culture (Jääskelä et al., 2017; John, 2015; King and Boyatt, 2015; Kim et al., 2013; Holden and Rada, 2011; Liu, 2011; Somekh, 2008). Beliefs also play a key role in our understanding of the academic adoption of technology (Hammond, 2011) and act as key enablers or barriers to technological integration (Prestridge, 2012). Hence, understanding beliefs and other influencing factors in adopting technology is a key goal of the research. During the interviews, participants were asked to provide commentary on their beliefs and rationale for the use or non-use of technology. Participants highlighted four key points for discussion: 1. A belief in the enhancing nature of technology; 2. The perceived benefit of technology for the student; 3: the influence of the surrounding organisational culture; and 4: the influence of external actors and discourses. We will now examine each of these in turn.

7.4.1.A belief in the enhancing nature of technology

Participant beliefs are a key influence over teaching practice (Pajares, 1992; Nespor, 1987) and understanding the participants' conceptualisations of technology and their beliefs about technology's relationship to teaching practice have obvious implications for our understanding of its integration into practice (Englund et al., 2017; Bain and McNaught, 2006). While beliefs are idiosyncratic in nature (Ertmer, 2005), there were a number of shared beliefs amongst the participants. The most prominent of these was the belief that technology enhances the educational experience. A variety of beliefs linked to the theme of *enhancement* were communicated by participants and included: technology makes education *better*; technology *enhances* education; technology makes education more *accessible*; technology makes learning more *interesting*; technology makes learning more *active*; technology makes education *relevant* to the modern workplace, and technology *modernises* teaching and learning. Participants beliefs in the enhancing power of technology bore a similarity to the broad and unreflective use of the term 'enhancement' within the literature, whereby enhancement is typically placed into one of two categories, either a change in the means through which teaching happens or changes in how teachers teach and how learners learn (Kirkwood and Price, 2014). When challenged on the origins and validity of their claims to enhancement, few of the participants were able to identify sources of knowledge in support of these propositions and assumptions. To counter this, several of the participants drew upon anecdotes and episodic memory as a way of underpinning the validity of their beliefs (Nespor, 1987) with the individual's lived experience of education and their experiences of technology appearing to be a strong influence on current belief and practice.

As well as ignoring research, it is also worth noting that during the course of discussing their beliefs of enhancement, participants repeatedly failed to link theories of teaching and learning to their use of technology. While participants did approximate a range of pedagogic approaches such as 'active learning' or 'collaborative learning', there appeared to be a disconnect between their practice and educational theories as they relate to technology use. This is congruent with the findings of Drumm (2019), who observed that pseudo-theories and folk pedagogies (Olson and Bruner, 2008) play a significant role in educators' conceptualisations of their digital teaching. While an approach to practice that is based on belief and pseudo-theory over empirical evidence may be seen as problematic, it is vital that these beliefs and suppositions are not disregarded or adjudged to be invalid. Instead, they should be recognised as influencing forces on these participants' technological practice, which must be addressed in any effort to effect practice change. Drumm suggests that by openly acknowledging the role of these beliefs, pseudo-theories, and folk pedagogies, institutions may address a need for critical engagement and evidenced informed practice, 'bypassing the easy-to-grasp clichés and embracing the complexity of human-technological entanglement.' (Drumm, 2019, p.12).

7.4.2. Beliefs about the student and technology

The role of pseudo-theories was also noted with respect to the participant views on technology and students, particularly a belief in the pseudo-theory of the digital native student. The term 'digital native' (Prensky, 2001) is used to describe a generation of individuals born at a time whereby technology is a ubiquitous presence in their everyday lives. Prensky posits that the digital native student is inherently digitally literate, thinks differently to prior generations of students, processes information differently to prior generations of students, and shows a preference for digitally augmented educational experiences. Prensky also suggests that academics occupy the role of 'digital immigrants', those who were not raised in a technological world and who now 'speak an outdated language (that of the pre-digital age)...struggling to teach a population that speaks an entirely new language' (Prensky, 2001, p.3). These commonsensical ideas were initially adopted by higher education and wider society with little in the form of critical review. While they have now been critiqued and largely discredited (see Bennett and Maton, 2010; Brown and Czerniewicz, 2010; Helsper and Eynon, 2010; Bayne et al., 2020), the simplified homogenous representation of the student as a digital native remains prevalent in both societal and educational discourse and policy (Czerniewicz and Rother, 2018; Selwyn, 2009).

Participant belief in the truism of the digital native's preference for technology augmented education was exemplified in the data through accounts of curriculum redesigns and technological experiments which have failed to yield desired outcomes. In some cases, reliance on assumptions underpinning programme design had resulted in pedagogic failure and rising tensions between academics and students. Essentialist assumptions about student preferences for digital educational experiences supported a general belief that technology was 'better' for these students. The participant accounts contained sweeping generalisations about the digital lives of students. These included misconceptions regarding student preferences for online communication, their proficiency with technology, the apparent diminishing of student attention spans, and the need for attention 'stimulating' educational content.

Other beliefs held about the benefit of technology for students were more grounded in empirical evidence and lived experience. A key benefit highlighted by the participants was the use of technology for the benefit of students who needed to balance the demands of education and employment. In Ireland, student fees for full-time undergraduate programmes were abolished in 1996, but increases in registration fees post the 2008 financial crisis now means that on average, 50% of the students in the Irish higher education pay in excess of three thousand euro per year for their education (Fleming et al., 2017, p.35). The global rise in working university students (Owen et al., 2018) was mirrored in Ireland, where in 2016, 46% of students indicated that they worked during term time (Harmon and Erskine, 2017). Duncan's survey of his own students highlighted a high level of employment during term time:

> *The research I have is 69% of them are working. If I look at my 3rd year students in the school of business, 82% of them are working more than 15 hours a week* (Duncan)

Employment during the academic year may have a detrimental effect on student performance and retention (Hovdhaugen, 2015; Callender, 2008), and technology was viewed by the participants as a mechanism for maintaining student engagement in the face of the economic necessity to work. The data suggested that the participants responded to this reality by bringing a sensitivity to their roles in adopting technology in a manner that would allow students to maintain engagement with their studies while striving to find a balance between the competing needs of education and employment.

7.4.3. *Organisational culture and technology*

While efficacy and beliefs played key roles in the uptake of technology, we must also recognise that the use of technology takes place within an influencing socio-cultural setting, shaped by inter-locking cultural, social and organisational contexts (Somekh, 2008). The culture of technology may be shaped by advocates within the organisation, from those in positions of power and from external discourses and actors (Kompf, 2005; Nespor, 1987). These sociocultural influences are acknowledged by the participants who highlight the department's culture and wider institute culture as a key influence on their practice. The broadly technopositivist (Njenga and Fourie, 2010) internal culture acts as a powerful influence over individual practice (Zhu, 2015; Ertmer and Ottenbreit-Leftwich, 2010; Smith, 2006). Practice is shaped by the normative practices and discursive inputs from fellow academics, management and students. The wider academy's influence plays a key role in shaping practice, with participants highlighting a culture of judgment of those who chose not to adopt technology. While disapproving of this culture, several of the participants inadvertently use labelling to describe colleagues who failed to adopt technology, using derogatory terms such as 'Naysayers' (Megan), 'dinosaurs' (Ben), 'poor things' (Ben), 'oak trees in a wind of change' (Duncan), 'crank' (Peter), 'luddites' (Peter). This culture of judgement appeared to be widespread within the organisation and can have a damaging effect on the labelled individual, as noted by Bryson and de Castell (1998):

> *Teachers who are perceived as hesitant, or who experience difficulties with the implementation . . .will be understood as "resisting" educational innovation; they may be characterized, for instance, as "reluctant users," or as "Luddites," in need of some kind of intervention facilitative of an "attitude change" with respect to new technologies..."*
>
> (Bryson and De Castell, 1998, pp.544–545)

In the absence of a formal mandated use of technology, the power of the internal culture shaped and governed the use of technology. Technology was seen as 'the way we do things around here', and individuals needed to weigh up their own needs and views on technology with colleagues' expectations and normative practices. Technology use had become a logic of practice to the extent that non-use was seen as counter logical. There was little evidence of the conscious introduction of technology on solid empirical or theoretical foundations, nor was there evidence of a consensus on pedagogical approaches to technology use. Rather, as Peter suggested, technology adoption had perhaps itself become the goal, a defining feature of the internal culture:

> *It goes back to the idea, what's the point of the technology? It's the technology becomes the point in itself, and I totally disagree with that.* (Peter)

Straub posits that technology adoption is an innately social process that is influenced by 'peers, change agents, organisational pressure, and societal norms' (Straub, 2009, p.641). The data suggests that students were also a key change agent who contributed to the varying pressures to use technology in practice. The student voice and its influence were partly manifested through a number of formal communication mechanisms for gathering student feedback, including the internal quality assurance processes[13], course boards[14], and external surveys such as the Irish Survey of Student Engagement (ISSE)[15]. However, it was the informal channels of student feedback and communication which appeared to influence participant practice. Several of the participants

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[13] The Institute made use of the QA1, QA2 and QA3 forms, in widespread use in the Institute of Technology system for the gathering of student feedback.
[14] Course boards are responsible for (i) monitoring and review (ii) quality assurance and (iii) operational issues associated with a given academic programme. Students representatives are typically invited to two meetings a semester to provide feedback to academics involved in programme delivery.
[15] The ISSE survey is an annual survey run across twenty-seven higher education institutions which surveys students on engagement and experiences of Irish Higher Education. More information at: https://studentsurvey.ie

recounted experiences of students complaining about their colleagues use of technology. For example, Kate states "*There's been no formal complaints from students. You'd certainly hear mutterings…*" (Kate), while Peter recounts unsolicited complaints from students about his peers "*…when a student starts blurting out something, you're kind of caught off guard, that they've maybe criticised a colleagues' approach, and you've heard it. You can't un-hear it…*" (Peter). The critical student voice communicated an expectation of technology use in the educational experience. The expectation of students was noted by many of the participants as a key driver for their adoption of educational technology. This is congruent with the findings of King and Boyatt (2015) and Walker *et al.* (2018) who found that the expectation of students was a significant factor in the adoption of technology amongst academics in UK higher educational institutions. Whether this is reflective of the actual expectations of the students in this case remains an unknown.

The data also suggested that academic management influenced technology adoption and the decisions that participants have made about adoption. Academics rarely have complete freedom in their approach to teaching activities, and their practices tend to reflect the department and institutional environment shaped by management (Kirkwood, 2009). An analysis of documents and policies at the site of study suggested that technology was a key part of the institute's strategy. However, there was no evidence that technology use was formally mandated. The use of technology appeared to be framed as a choice or an innovation-decision for the individual academic. Rogers (2010) puts forward three types of innovation-decisions that may be applied to the adoption of educational technology:

> *We distinguish among three main types of innovation-decisions: (1) optional innovation-decisions, choices to adopt or reject an innovation that are made by an individual independent of the decisions of other members of the system, (2) collective innovation-decisions, choices to*

adopt or reject an innovation that are made by consensus among the members of a system, and (3) authority innovation-decisions

(Rogers, 2010, p.372)

In the absence of a mandate of use, technology adoption was framed as an *optional innovation-decision* for the individual academic. Yet Fiona, Ben, Julia, Peter, Audrey, Donal, and Dorothy spoke openly about the pressures to make the *right* option in choosing to adopt technology in teaching practice. Participants made regular reference to management's language and the communication of management expectations of technology usage. Audrey recounts school meetings in which senior management express an opinion that all staff *should* be using technology. Peter's account of a head of department asking him to give a new staff member access to 'the Moodle page', conveyed an assumption and expectation of technology use. Examples of management insisting that technology was a feature of new programme design further challenged the notion that technology adoption was an optional choice for the individual. Selwyn (2007) notes the increasing managerial concerns of higher education administrators with respect to technology and the pressures to adopt it for reasons of branding, efficiency and competitiveness. These concerns were evident in the institute's strategic plan[16], which signals a need to 'Expand our innovative use of technology to further enhance the teaching and learning environment' (ITB, 2015, p.9). The institute's digital experience strategy (ITB, 2018) outlines a vision for the creation of a digital campus and a future vision for technologically enhanced education. It acknowledges the threat from private educational providers such as '*Coursera, Lynda.com, Pluralsight'* (ITB, 2018, p.5) and in response to this, suggests the development of new 'business models' to fend off this threat. While academic-managers may have different

[16] Published in late 2015, the ITB Strategic Plan 2016 – 2019 was the final published strategic plan for the institute prior to its redesignation as a constituent element of the new Technological University Dublin. Available online at: https://www.itb.ie/AboutITB/documents/StrategicPlan_Dec16_000.pdf

ideologies and perspectives on education (Deem et al., 2007) to those outlined in these documents, there is little doubt that they may find themselves captured by the corporate managerialist discourse of their institute (Winter, 2009). The formalised mandating of technology that might result in industrial strife and resistance was supplanted by a culture of expectation that left these participants in little doubt about the type of choice to be made. Hence, technology which was framed as an *optional innovation-decision* for the individual academic was recast towards a form of *authority innovation-decision.*

7.4.4. Influence of the outside world

Higher education institutes are dialogical entities shaped by a variety of discourses originating from outside and within the organisation. These varying and sometimes competing discourses may influence academic cultures and identity (Clegg, 2008) as well as guiding and setting limits on recurrent practices, values and 'taken-for-granted knowledge' (Trowler, 2001, p.187). In their examination of digital scholarship, Hildebrandt and Couros observe that multiple technology-related discourses exist, and academics may be agential in adopting particular discourses (Hildebrandt and Couros, 2016). Interestingly each of the participants referred to external discourses in providing a rationale for technology adoption. These discourses included flexibility and lifelong learning (Flannery and McGarr, 2014), enhancement (Bayne, 2015), economic rationale (McGarr and Johnston, 2019), institutional rankings (Jöns and Hoyler, 2013), globalisation (Clegg et al., 2003), the knowledge economy (Selwyn, 2013c; Kozma, 2005) and digital natives (Bennett and Maton, 2010). The data highlighted the strong influence of the discourse of Ireland's knowledge economy and the need for digital experiences which contribute to the profiles of graduates. The data also highlighted an awareness of technology as a source of competitive advantage in higher education, as participants acknowledged the globalised higher education environment and the changing nature of educational provision. Ten of the participants made direct reference to other Irish educational institutions as *competitors*, with technology regarded as a solution for online learning and the recruitment of students from beyond traditional catchment areas. Linked to the notion of the market and competition was the framing of technology as an important component of the organisations brand and image. Technology was linked to '*reputation, brand, positioning*' (Fiona), to '*Making sure that we're placed up there with the best of them*' (Julia), to a sense of modernisation '*we will look like we're moving forward'* (Audrey). These views are congruent with the observation of Schneckenberg (2009, p.412) who notes that higher education institutes leverage technology as a means for improving recognition of brand and reputation in the competitive globalised educational market.

There appeared to be a degree of participant 'capture' (Trowler, 2001) by the discourses of modernity, the needs of the knowledge economy, the global education marketplace, competition, brand, image, digital natives, and wider societal expectations. There is little evidence of participant 'displacement, resistance, reconstruction and negotiation' Trowler (2001) of these discourses, which might provide a critical challenge to the legitimacy of technology's influence on practice.

7.5.Summary

This chapter has provided an analysis of the data, which illustrated a rich and varied use of educational technology across a variety of practice spaces. This finding runs counter to a long-running commentary that has framed academics as technological luddites who have laboured to alter their outdated practices in light of wider technological driven societal changes. Changes in individual practice appeared to be strongly influenced by the technopositivist culture of the discipline and wider organisational culture. In the absence of a mandate for the use of technology in teaching, academic management, students, and peers act as key influencers in driving the academic adoption of technology. This adoption was supported by an awareness and alignment with the wider societal discourses regarding education and technology. These internal and external discourses were congruent with the underlying belief systems of the participants, which framed technology as a modernising and enhancing element of a contemporary educational experience. The combination of an internal technopositivist culture, external discourses, and the participants' own belief systems support an orthodoxy of technology whereby any non-use of technology appears to fly in the face of rationality.

As discussed, aligning oneself with the dominant hegemony of technology is not without its consequences for the individual. For some, the adoption of technology has brought enjoyment, benefits to workflows, and recognition from colleagues. For others, it has resulted in increased workloads, intrusions into personal space, and emotional impacts.

These findings point towards the socially constituted nature of technology practice and a need to further understand the socio-cultural contexts in which technology practice is situated. In response to this, the following chapter approaches the findings through the lens of Pierre Bourdieu's Theory of Practice (1977) in an effort to broaden our understanding of academic technology use and its effect.

CHAPTER 8 | Gazing through a Bourdieusian lens

8.1. Introduction

The preceding chapter examined the actuality of technology practice, considering various approaches to individual technology use, the effect of technology use on the individual, and the underlying beliefs and values that shaped technology use. This chapter broadens our consideration of the object of study through the application of a series of Pierre Bourdieu's 'thinking tools'. These tools move us beyond a simple questioning of what academics 'do' with technology, towards considerations of systems and structures, social and cultural relations, and the meaning of practice to the individual (Beckman et al., 2018, p.198).

This analysis will argue that the practices of these academics are shaped by a habitus in transition, reflective of a wider field of higher education that faces fast-moving technological driven transformation and ideological change. Held beliefs regarding the enhancing and beneficial nature of technology and a propensity for the use of technology in practice are held in check by a mistrust of management intent, fear of indeterminate change, and an opposition to emergent ideologies which are linked to the use of technology in education. Despite their articulated misgivings, the majority of participants make efforts to align practice with the dominant technopositivist culture of the organisation and compete for recognised forms of technological capital that afford varying degrees of prestige and standing to these academics. The sociocultural assemblage of practices is shown to be strongly influenced by a doxa of technology which is supported by academics, management and students in their efforts to rationalise and normalise digital technology use in academic practice.

The use of the sociology of Bourdieu at this point also offers us an opportunity to engage in a critique of domination (Wacquant, 1998), and the chapter explores the struggles between academics and management for supremacy over technology and technology practice. Efforts by management to control the curriculum and colonise academic practice through the proxy of technology are just two examples of symbolic violence highlighted by the analysis. Symbolic violence is exercised in the spaces of struggle that surround technology and is facilitated through power, misrecognition, doxic truth, and the absence of a heterodoxy of technology use which might challenge the status quo of technology practice at this site of study.

8.2. Setting the scene

During the course of this study, my daughter Aoife attended an ophthalmologist to examine some issues with her vision. One of my fascinations with her doctors' practice was his ability to fit Aoife with a set of frames that allowed him to experiment with varying arrangements of differing interchangeable lenses. During each consultation, he would place these frames on her face and begin a process of adding and removing lenses, sometimes combining several lenses in front of each other. At the completion of each arrangement of lenses, he would ask Aoife to gaze at a changing digital screen filled with characters and symbols, which was located at the far end of his office. When she did, he would always press a clicker and ask her the same question, "what do you see now?" As she stared and responded, he would occasionally drop in a new lens and ask again, "what do you see now?" It was remarkable to watch the subject of her focus change through the addition and removal of varying lenses.

The metaphor of the lens is often used by scholars who make use of sociological theory as a conceptual tool to gain a deeper insight into their object of study. These theoretical lenses provide the researcher with a way to see and conceptualise the world from a different perspective, a way to force us to think about what we are looking at (Nash, 1999). Bourdieu's theoretical lenses have gained some small degree of attention among scholars engaged in the study of technology, despite the fact that Bourdieu himself paid little attention to technology as a subject of enquiry. Bourdieu was a key practice theorist, and the use of his conceptual tools encourages a social framing of practice. His work helps us construct an object of study that moves beyond instrumentalist considerations of technology, instead guiding us towards an acknowledgement of the complexities of the sociocultural space from which academics and technologies are inseparable. We may understand technology use in education through a relational analysis of the social world which highlights both power and struggle over technology, bringing into greater focus the effects of policy, discourse, power networks, organisational cultures, shared beliefs, and agents who influence individual and collective academic technology practice.

This attempt to further understand the socially located nature of academic technology practice makes use of Bourdieu's Theory of Practice (Bourdieu, 1977) which is based on the interlocking concepts of habitus, capital and field. The utilisation of this theory allows us to conceptualise and understand academic technology use as a social practice, considering the interplay between the subjective nature of the dispositions and values which guide individual practice (habitus), the specific forms of agency and prestige which are valued within a field of practice (capital), and the objective social structures and social spaces in which the practice is carried out (field). An examination of the data through the related lenses of doxa, illusio, symbolic violence, and misrecognition, are also put forward in an attempt to further understand the interplay between structure and agency that shapes academic practice and lived experience.

8.3. Habitus

As described in greater detail in chapter 3, habitus is a concept used to describe the underlying dispositions which influence an individual's behaviour and practices within a social space. In attempting to provide a commentary on the habitus of these participants, I am cognisant of the words of Karl Maton in his interpretation of one of Bourdieu's key concepts:

> *Yet, habitus is also one of the most misunderstood, misused and hotly contested of Bourdieu's ideas. It can be both revelatory and mystifying, instantly recognizable and difficult to define, straightforward and slippery.*
> (Maton, 2010, p.49)

The 'slippery' nature of habitus is in part due to the fact that the *habitus* cannot be directly observed in empirical research; instead, it may be apprehended interpretively (Reay, 2004, p.439). Bourdieu posits that 'habitus is constituted in practice' (Bourdieu, 1990a, p.52), made visible through practice (Bourdieu and Wacquant, 1992). With this in mind, an understanding of the habitus of these participants was sought out using the thematically analysed data. Interpretation was based upon an analysis of participant narratives which highlighted the individuals practices, values, and beliefs. Participants also offered reflections on the surrounding social space in which practice was actualised, giving consideration to the influences of sociocultural, political, and economic forces which shaped practice.

In encouraging the use of habitus as a conceptual tool, Reay (2004) notes that the examination of habitus can take place at both the level of the individual and at the level of a collective. Bourdieu describes the collective habitus as a "non-individual system of internalized structures, common schemes of perception, conception and action…" (Bourdieu, 1990a, p.60). In this analysis, I have concentrated on providing an interpretation of the collective habitus. I begin this interpretative act by providing an overview of some of the key influences that shaped the collective habitus, which in turn directed and produced social action and practice in this academic setting.

8.3.1.Shaping the habitus - Technopositivist leanings

The habitus of these academics was typified by a broadly positivist disposition towards the technologisation of social life and an acceptance of the resulting movements of technology into the social spaces of higher education. In the course of exploring lived history and experiences of technology, many of the participants anecdotes and recollections highlighted the perceived benefits that technology had brought to their daily lives. Fiona spoke about her playful joy of pre-booking airport parking and her newfound obsession with Twitter, Leo loved reading the Guardian newspaper on his tablet, Dorothy became excited when describing the benefits of her new robot vacuum cleaner, Barry talked about the introduction of Amazon Alexa to his home, while Audrey was grateful for the use of skype to maintain contact with her loved ones living abroad. Technology was seen as an enhancing element of their daily lives, and the narratives carried a sense of enthusiasm for technology use. These positive sentiments, shaped through the individual's personal experience, were extended to academic practice and evidenced in accounts that highlighted a propensity for the use of technology in teaching. Dispositions that guided the use of technology in the education setting were shaped by a number of previously examined beliefs and truisms. Technology was linked to discourses of enhancement, flexibility, 'digital native' students, modernity, and the economic imperative.

The habitus was also shaped by the strong public service ethic of these academics. Participants were aware of the broader academic standing and reputation of their public serving institution and the socio-economic backgrounds of the students who attended it. Technology was seen as a way to 'even the playing field' for their students, proving a source of advantage to those students who struggled to engage or to perform academically. Participants believed that their use of educational technology helped maintain student engagement, made learning materials more accessible, helped students balance work and study, and even helped the apparently diminishing attention span of the digital native student. The habitus was shaped by a perception that technology was better for the student and that the use of it in teaching and assessment was both logical and appropriate.

Educational technology was also recognised as a need of the contemporary higher education organisation. As previously discussed, participants demonstrated an awareness of the political and economic spaces which surrounded higher education and the varying pressures applied to institutions to utilise technology. Surrounding discursive spaces that linked technology to issues of flexibility, enhancement, economic rationale, rankings, globalisation, and the knowledge economy, were strong influences in the development of a habitus that legitimised and guided individual and collective technology use. The recognition of the wider market of higher education and the role of technology in enabling the institution to compete within it were well understood and acknowledged by the participants. Winter (2009) posits that this ideology of market-based rationality is so strong that academics may struggle to deviate from its logic. Hence, we see a habitus which was broadly disposed to technology use, formed through an orthodoxy of technology, meeting the demands of surrounding sociocultural, political, and economic discourses which justify technology adoption and problematise longstanding non-digital forms of practice.

8.3.2. Shaping the habitus - Ideological tension

While technologic and orthodoxy played a strong role in the shaping of habitus, so too did tension. Bourdieu notes that tension may be a feature of the habitus:

> '*habitus can in certain instances, be built, on contradictions, upon tensions, even upon instability…*'
>
> (Bourdieu, 1990, p. 116 as cited in Reay, 2015).

The data highlighted tensions in the form of deep ideological divisions between academics, academics and their students, and academics and management. The participants' pragmatic acknowledgement of the realities of the higher education marketplace and the influencing technological imperative should not be interpreted as an acceptance of the various ideological positions that seek to use technology in efforts to further the transformation and marketisation of higher education. To the contrary, a key division emerged between the public service ethic of these academics and the perceived neoliberal intent of the institution. The majority of participants framed their rationale for the use of technology in altruistic terms, whereas participants believed that the institute's rationale for the use of technology was based upon a self-serving neoliberal ideology driven by economic imperatives and market pressures. As previously highlighted in chapter 2, educational technology has deep linkages to neoliberalism and new managerialism (Munro, 2018; Feenberg, 2017; Kirkwood and Price, 2014; Selwyn, 2007; Clegg et al., 2003) and these academics linked the institute's technological intent with discourses of threat, including marketisation, rationalisation, and deprofessionalisation. The influence of threat and tension on the habitus was further highlighted by the participants framing of technology as a mechanism for the rationalisation of resources and a planned reduction in the institute's reliance on academic labour. As highlighted in the data, reductions in the cost of provision were perceived to be a key imperative for management interest in technology. Technology was seen as a way to remove the constraints of the physical campus and, at the same time, massify provision through online engagement. Arising from this, many of the participants viewed technology as a threat to tenure and a threat to the stability of the academy. When Megan asked, "*Could I potentially be redundant?*" (Megan), she was perhaps acknowledging a well-established international neoliberal reform agenda which has seen educational technology play a role in the replacement of tenure track academics for less qualified teachers (Feenberg, 2017) and a rise in an academic underclass of low paid academics in precarious employment (Poon, 2006; Kompf, 2005; Willmott, 1995).

These tensions pull the habitus in opposing directions, holding in check the propensity and enthusiasm for technology. These beliefs and experiences of tension point towards dispositions of mistrust and fear. These negative dispositions are perhaps representative of the struggles of the wider field of academia, which grapples with the practicalities, threats, and undetermined consequences of widespread technology adoption in practice.

8.3.3. Shaping the habitus - Transition and hysteresis

Habitus is understood as the 'internalization of externality' (Bourdieu, 1998, p.55), a shaping of the internal values and ways of thinking resulting from a congruence with the habitus of the surrounding social space. For Costa (2015b, pp.160–161), 'taken-for-granted practices are habitus that has become field' and in the field of study, we see a positivist culture of technology which rationalises the use of technology in practice. So influential is the surrounding social space on the practices of these academics, that the non-use of technology becomes what Bourdieu referred to as an 'improbable practice':

> *The most improbable practices are therefore excluded, as unthinkable, by a kind of immediate submission to order that inclines agents to make a virtue of necessity, that is, to refuse what is anyway denied and to will the inevitable*
>
> (Bourdieu, 1990a, p.54)

While the non-use of technology might have been deemed an 'improbable practice', Costa (2015a) reminds us that digital practices can destabilise academic identity and bring the habitus of the academic into conflict, both internally and with the habitus of the traditional field of academia. This case suggests a possible hysteresis of academic habitus, a divided habitus resulting from a disjunction between old and new as participants attempt to align their academic beliefs, values and practices to an academic field in transition. Bourdieu described the divided habitus as:

> *A habitus divided against itself, in constant negotiation with itself and its ambivalences, and therefore doomed to a kind of duplication, to a double perception of the self, to successive allegiances and multiple identities.*
>
> (Bourdieu and Ferguson, 1999)

Tensions were exposed between emergent digital practices and long-established norms of teaching which carried with them a challenge to the traditional didactic teacher identity. Many of the participants were accepting of but challenged by the need to consider new pedagogies, new technologies, and new conceptualisations of what it meant to be a teacher in a technology-rich higher education environment. Emergent digital practices brought challenges in the form of workload changes, emotional effect, changes in relationships, feelings of disembodiment, feelings of disempowerment, and struggle with others. And yet these effects were tolerated by the participants in their attempts to align themselves and their practices with the field's dominant technological culture. The submission of Irene to the dominant logic of technology and the inevitable oncoming technological driven change, perfectly captures a field and habitus in transition:

> *There are always gonna be people that are going to say we should stick to the old way. The old way's gone.*
>
> *(Irene)*

Irene and others acknowledged the need to align oneself with the field and with the ‘new ways’. Both Irene and Megan used a language of ‘movement’ to convey efforts to align practices and values to the field. Bourdieu posits that this alignment of the collective habitus to the surrounding social space's values and practices can be ‘collectively orchestrated without being the product of the organizing action of a conductor' (Bourdieu, 1990a, p.53). In this instance, there is no evidence of a 'conductor', no key individual, no singular structure, or no individual policy which has driven the change and movement of this habitus. Academic habitus as it relates to technology, appeared shaped by a hegemony of technology as an educational orthodoxy supported by academic peers, students, management, internal and external technology discourses, policy, and societal expectations.

While this broadly technopositivist aspect of the academic habitus results in the acceptance of technology into practice, it is important to reflect on the apparent effect of the tensions which remain within the habitus. This is a habitus of fragmentation. Inclinations that draw academics towards the use of technology for the betterment of students are held somewhat in check by the competing ideologies and 'paradoxical agendas' (Lewis et al., 2005, p.66) which surround educational technology. These tensions are evidenced in the participants' accounts which communicate misgivings, fears, suspicions and a struggle for identity.

For Bourdieu, habitus is closely linked to the field within which it is shaped (Bourdieu, 1990a). To gain a more nuanced understanding of the social shaping of these practices, I now offer a perspective on the influence of the wider social milieu using Bourdieu's related concepts of capital and field.

8.4. Capital

Within the field, participants sought out and conferred forms of 'capital' which allowed agents to gain position in the field through technology use. As discussed in chapter 3, Bourdieu uses the term 'capital' to describe specific forms of agency and prestige that are distributed and valued among the participants in a field (Sterne, 2003). The attainment of capital is somewhat dependant on a well-formed habitus and a degree of alignment with the cultural values and norms of the field. In this instance, academics who communicated and demonstrated their dispositions for the use of technology gained cultural capital, which was valued in this technopositivist setting. To these participants, it was important to be associated with technology and be *seen* to incorporate technology into practice. Those who adopted technology were seen to be made of the 'right stuff' while those who rejected its orthodoxy were 'labelled' and had little or no cultural capital as it related to technology use. Cultural capital was also evident in participant accounts that described the value of their peers' technology knowledge. Academics who possessed this form of capital were held in high esteem and had a degree of improved standing as it related to technology use. Knowledge of technology as a form of cultural capital was not evenly distributed among the participants of the field, with some individuals and disciplines accumulating greater amounts of this form of capital. The participant accounts also evidenced the value of objectified forms of cultural capital, which took the form of laptops, cameras, microphones and other technological artefacts. As will be discussed later, some individuals and discipline groups had attained significant levels of this capital while others struggled for access.

In *Homo Academicus*, Bourdieu described academic capital and intellectual capital as two forms of cultural capital that are specific to the field of higher education (Bourdieu, 1988). Academic capital is typically held by individuals who occupy administrative and management positions of power within higher education institutions, while intellectual capital is based on academic and scholarly standing (Bourdieu, 1988). These are, in effect, two opposing forms of cultural capital and have a significant role in the ongoing struggles between management and academics in contemporary higher education settings. As we shall see later in this chapter, both forms of capital were used by academics and management in their respective strategies to gain position arising from educational technology use in practice.

Social capital was also a form of capital valued by the participants in the field. It represents the value attached to membership of a group or relationships of value. Of notable interest was the social capital accumulated by Duncan as highlighted by three of the participants who made specific reference to his improved positioning and standing. Duncan's innovative use of technology had gained recognition by senior management and allowed him to build new working relationships with management and international colleagues. In Duncan's own words, this social capital had been good for his 'profile' and his 'name' and had allowed him to build new networks of contacts while earning praise from colleagues and students.

Economic capital was also closely tied to technology. Participants recognised technology as an opportunity for potential economic income. In Ireland, state-backed calls for third level provision have seen an increase in demands for flexibility and the use of online delivery. Technology provides a mechanism for the institute, academic disciplines and staff within those disciplines to acquire economic capital through provision. The state-backed mandating of technology use in the curriculum furthered the competitive environment between institutions and within the institution, as staff and disciplines were forced to adopt positions of self-interest in competing for access to economic capital. Economic capital distributed within the disciplines also provided a source of capital and status for academics. Finance for software, equipment and pilot projects provided a degree of support but also reproduced the culture of competition among academics. As with the economic field, there were winners and losers, highlighted by and an inequality in the attainment of capital:

> *I have often seen lecturers who have used new elements of learning technology and they have that funding for it. I said, "Oh, that's nice. I'd love to have been able to do that. I wonder how they got that?"* (Ben)

These varying forms of capital as they relate to technology may be thought of as *technological capital,* which has been described as both a subset of and addition to, Bourdieu's economic, cultural and social forms of capital (Selwyn, 2004). This arbitrary form of technological capital only held value through acknowledgement and recognition, and the data highlighted the value placed on this form of capital by the participants. The following section, which offers an overview of the field and its key actors, highlights struggle over these forms of capital, illustrating their value and their linkages to the attainment of agency and prestige within the field.

8.5. Field

The previous chapter analysed the technological practices of academics in terms of what academics 'do' with technology, the practice spaces in which technology is used, and the sources of knowledge that informed individual technology practice. While such an analysis was useful in our efforts to understand the actuality of academic practice, Bourdieu argues that the study of practice must move beyond accounts of the 'what', by paying attention to the social spaces in which the practice occurred (Thomson, 2012). By way of a reminder to the reader, Bourdieu uses the metaphor of the 'field' to describe a social space occupied by agents (individuals or institutions) who use various strategies to improve their position and influence in the field.

In this discussion on field, I avoid any attempt to put forward an empirical mapping of the objective relations within the field and their relative positions. Instead, I offer a broad description of the field based on the participants' accounts and data examined, and I will identity the positioning of the dominant and dominated categories of actors which seek influence over technology at the site of study. The consideration of field will also pay attention to the relations between this field and the wider social fields, in an attempt to map some of the key external influences which shape the values, norms and practices of the academics at the site of study.

8.5.1.A field of struggle

In *Homo Academicus* (Bourdieu, 1988), Bourdieu describes the university as a site of struggle over academic and intellectual power, a locus of constant struggle which seeks to alter the very structure of the university itself (Wacquant, 1990). In this case, technology becomes a site of intense struggle (Feenberg, 2012) in which dominant interests seek to shape hegemony as well as the selection and control of technologies. Technology became a contested space in a hierarchical power network of academics, academic management, and students (see Hannon and Bretag, 2010; Lewis et al., 2005; Noble, 2002) which took the form of an 'ongoing struggle between various groups over the uses and meanings of technology' (Lewis et al., 2005, p.69). One ongoing struggle of note was the struggle for control of technology through the academic curriculum. A curriculum cannot be thought of as neutral as it typically reflects the 'hemogenic values, ideals, and goals' of those who create it (Kompf, 2005, p.225). Traditionally, the shaping of academic curricula was a responsibility of the academy who have enjoyed considerable autonomy over what was taught, how it was taught, and in many cases, to whom it was taught. Recent decades have seen some erosion of academic autonomy in facets of academic practice (Harris, 2005; Henkel, 2005; Noble, 2002; Willmott, 1995), including curriculum design. Decreasing academic autonomy is further challenged by technology as it brings with it a host of other influencing higher education professionals with differing and sometimes competing values and interests (Kirkwood and Price, 2014; Hannon, 2013; Macfarlane, 2011; Sappey and Relf, 2010). In this case, management was one such group that sought to promote a culture of technology use through programme design. By making technology a feature of the curriculum during the design stage, management legitimised both the centricity of technology in practice and the need for academics to develop their technological proficiency. Management appeared to have sought only notional contributions from academics prior to this mandating of technology, a pattern of behaviour which bore a striking similarity to case studies undertaken by

Singh and Hardaker (2017) in five prominent universities in the UK. Despite their apparent sense of unease, none of these participants engaged in any meaningful form of critical challenge or resistance. There can be little doubt that power imbalances between management and academics are a factor in the passive acceptance of technology. Bayne (2015) links this form of passive acceptance to the reductive nature of the discourses surrounding technology which render deeper questions of technology resistant to the discussion. Selwyn has some degree of sympathy with those who might find themselves in similar situations, noting that the 'current new managerial-led model of higher education ICT use will be an incredibly difficult paradigm to alter' (Selwyn, 2007). While this may be true, Selwyn's observation does not encourage the passive acceptance of these actions. Clegg suggests that pessimism about the bigger structural picture does not 'negate the exercise of agency locally' and all too often, academics had set aside their agency for developments that were far from inevitable (Clegg, 2005).

Control over technology was itself a key struggle between management and academics. The findings highlighted issues with the academic voice and, in particular, their inputs into the strategic direction of technology use at the institute. Many of the participants felt excluded from the institute's top-down decision-making process, which was described as undemocratic, hidden and obscured. Suggestions for the establishment of user groups that might have allowed for increased academic input into the selection of technologies were perceived to have been ignored by management. The exclusion of the academic voice strengthened management control and authority over technology. This resulted in a culture of technology whereby academics worked with the technologies that they were provided with. Similar management behaviours were observed in the study of Habib and Johannesen (2014), who sought insights from 171 academics across five higher education institutes in Norway. Their study illustrated a lack of academic input into the technology decision-making processes and a similar frustration resulting from the exclusion of the academic voice. Hall (2013) is critical of management approaches that marginalise academic perspectives and further threaten academic autonomy over their practice. If we view technology within the higher education institute as a political process, then the exclusion of both academics and students' voices is troubling. It was notable that only one of the participants (Peter) considered questions of democracy and voice from the perspective of the students. Academics felt that they should be included in a democratic process for the governance and use of technology but failed to recognise the legitimacy or place of the student voice. This form of struggle is not unique to this case. Holloway (1984) notes that decisions with regard to educational technology are rarely made by the people most effected by them, namely staff and students. Stakeholder participation is a key element in the success of educational technology innovation (Ely, 1990, p.24) and should involve inputs from all levels of the institution (Zhu, 2015; Zhu and Engels, 2014; Garrison and Vaughan, 2013), taking into account the voices of a wide variety of stakeholders including academic staff, learning technologists, IT support, library staff, and students (Singh and Hardaker, 2017; Roushan et al., 2016; Chow, 2013; Cook et al., 2007).

A final area of struggle worthy of attention was the struggle between academics and management over leadership and support. Leadership is a key element in educational technology adoption (King and Boyatt, 2015; Ely, 1990), and yet somewhat paradoxically, the absence of clearly identified leadership had not hindered the widespread adoption of technology at the site of study. Participants described a field of academic practice in which technology sits in an uneasy space between centralisation and decentralisation (Weller, 2011). These participants were seeking a response to their foregrounding of technology within the organisation's culture, a meeting of academic need and management endorsement at a point of intersection between bottom-up and top-down innovation. In their eyes, management had failed to support this academic-led culture of technology use. These findings are mirrored in the study by Habib and Johannsen (2020), whose data highlighted a gap between what managers believe they do to support and implement educational technology and what their academic staff perceive them to actually do. In demanding leadership, they seek out guidance, support and effective communication of policy and strategic intent, which are recognised in the literature as contributing factors in the successful embedding of technology in higher education organisations (Williamson, 2019b; Czerniewicz and Brown, 2009; de Freitas and Oliver, 2005). Participants describe a desire for leadership with knowledge of teaching practice, an understanding of the effect of technology on practice, and an ability to positively influence academic staff and students' experiences through informed decision-making linked to wider organisational and societal needs.

8.5.2. A field of competition and of hierarchy

According to Bourdieu, a field is structured internally in terms of its power relations. Participants in the academic field may occupy positions of dominance, subordination or equivalence depending on their accumulation of the capital valued by the field (Jenkins, 2006). Within this field, academic capital, intellectual capital and technological capital are linked to the use of technology in practice. Bourdieu's theories of academic[17] and intellectual capital and the tensions between those who hold these opposing forms of capital provide a useful way to consider the power relations between management and academics in higher education settings (Rowlands, 2018). The addition of technological capital furthers our understanding of technology as a site of struggle.

[17] In Homo Academicus, Bourdieu mapped a number of different forms of capital associated with academia including: (1) Economic and social capitals; (2) cultural capital; (3) capital of academic power; (4) capital of scientific power; (5) capital of scientific prestige; (6) capital of intellectual renown; and (7) capital of economic or political power. Academic power was linked to membership of the institute and the holding of positions of power e.g. management (Bourdieu, 1988, p.40)

In this field, management occupied a position of domination insofar as they held significant amounts of academic and economic capital, which strongly influenced the culture of technology at the site. Management leveraged academic capital in efforts to maintain a degree of power over technology practice. A key form of control was the use of academic power to legitimise the mandating of technology use in the curriculum, an act that used technology as a proxy for the colonisation and transformation of academic practice. This imposition of technology resulted in changes to academic practices, changes to the relationships between academics and students, and changes to the space and time in which practice occurred. This change process was furthered by a management voice that made frequent use of a language of technology. This language of technology communicated an expectation of technology use and contributed to the development of a logic of technology practice. The voice of management was promoted at the expense of the academic voice, which was excluded from technology decision making processes. This form of silencing of the academic voice diminished their ability to contribute to the culture of technology and reinforced the supremacy of academic capital (Rowlands, 2018) and highlighted a need for academics to acquire academic capital over intellectual capital to effect change in technology.

Management also made select use of economic capital to finance preferred technologies and technology-related initiatives of perceived value. Through economic capital, management established domination over the technologies which were purchased and to whom those technologies were made available. Access to technological knowledge, which was acquired through economic capital (e.g. specialist training, conference attendance, paid journals etc.) was also controlled by management. Economic capital appeared to play a key role in the acquisition of technological capital, and it was of little surprise that 'cash rich' STEM disciplines such as Engineering and Informatics had acquired considerably more technological capital than discipline units located within the arts and humanities. Participants in the STEM disciplines spoke of their laptops, cameras and recording devices, while those in the arts and Humanities acknowledged the disparity between disciplines and conveyed a sense of resentment and frustration at the inequality in the culture of technology use. In creating this division, disciplines with differing levels of technological capital had been set against each other in a form of competition, resulting in further and ongoing accumulations of technological and academic capital for the management of those disciplines.

Interestingly, academic management were perceived to have low levels of technological capital as the validity of management's knowledge of educational technology was questioned. In particular, senior management who had left their academic teaching practice behind, were perceived to have had insufficient experience of teaching with digital technologies, and therefore had little more than a passing knowledge of its applicability in teaching and its resultant effect on practice. In essence, participants felt that their knowledge of educational technology (cultural capital) was superior to that of management. This was problematic for academics who sought informed and experienced leadership and direction with regard to their technology practice. These perceived deficiencies in management knowledge were congruent with the findings of Habib and Johannsen (2020), whose data showed that many academic management had little or no knowledge of educational technology and policy and demonstrated scant interest in technology-supported learning activities.

Despite portraying themselves as a dominated class, academics also wielded considerable power over the culture of technology at the site of study. Ciaran's comment of '*I think the institute is following the lecturers' (Ciaran)* described a power over technology and culture which academics held but seldom acknowledged. Within the academy, academics established and normalised conventions of practice, legitimising some forms of practice while criticising and labelling colleagues for deviant practices or the non-use of technology. The recognised use of technology in academic practice became a form of legitimisation:

> *the university field is, like any other, the locus of a struggle to determine the conditions and criteria of legitimate membership and legitimate hierarchy…the different sets of individuals (more or less constituted into groups) who are defined by these different criteria have a vested interest in them.*
>
> (Bourdieu, 1988, p.11)

Technology use in practice established a hierarchy of position amongst academics, with those holding significant amounts of technological capital being held in high regard by their peers. The value of this form of capital may have been increased due to the difficulty of increasing one's intellectual capital in a role that was defined by a high teaching load. For many of the participants, the weekly workload of 16 to 18 hours of contact teaching left little time for research or publication which might normally allow for the accumulation of intellectual capital. While intellectual capital was naturally present in the academic environment, the comparative ease by which technological capital was obtained may have marked it as a capital worthy of pursuit. While the use of technology allowed individuals to accumulate this form of capital, so too did the individuals knowledge of technology. As previously mentioned, knowledge of technology, a form of cultural capital, was highly valued. Access to this knowledge was not always freely given, with some participants reporting a competitive culture whereby a minority of individuals 'held on' to their capital. In a higher education setting where the acquisition of a knowledge of educational technology was largely dependent on peer sharing, an individual's ability to adopt and integrate a technology into practice became dependent on their capability to access and acquire technological capital through social exchange. This resulted in an uneven distribution of technological skill and know-how in the academy, giving some academics a perceived advantage over others. Frank, Zhao and Borman (2004) noted the importance of the exchange of these forms of capital in the diffusion of technology in schools, and suggest that recognition by change agents of the value of technological capital and the facilitation of conditions which might allow educators to exchange and accumulate forms of technological capital might improve conditions for the adoption of technology in practice.

Academic power was also evident in instances where academics had been granted academic and economic capital over technology projects and pilot studies which afforded them a degree of spending and decision-making power. However, many forms of technology use at the campus did not rely on these forms of capital. Nor were they dependant on management leadership and support. As outlined in the data, many of the participants felt that management had adopted a deliberately laissez-faire approach to the technology culture at the site. An examination of the institute's annual reports on teaching and learning highlighted an extensive use of open source and free-to-use educational tools, which at that time did not require management permission or authorisation. The prevalence of bottom-up initiatives, many of which have subsequently been mainstreamed, and the decentralisation of the management of technology, granted academics a great deal of control and power over the culture of technology use at the site. However, managements ongoing control of academic and economic capital remained a key point of struggle which perhaps lead to an exaggerated sense of disempowerment and domination amongst academics.

It is also worth noting that these participants held a great deal of power over their students, with academics determining the technologies students would use and how they would make use of them. As highlighted by Peter, academics provided no forum for the student voice and were perhaps as guilty as management in failing to provide a democratic discursive space for those who sought to shape their own experiences of technology.

While not as influential as management or academics, students also exerted considerable influence over academic technology practice. As evidenced in the findings, the student body communicated their expectation of technology use in teaching and assessment. They leveraged their voice through formal and informal channels and provided approval and validation for certain academic practices. The data shows that they demanded increased use of virtual learning environments, the production and dissemination of digital materials, and an increase in academic utilisation of technology for communication and assessment.

A range of strategies for the accumulation of capital as adopted by these three constituent groups of actors is shown in Table 2 (below):

Management	**Academics**	**Students**
Imposition of technology on the curriculum	Control over own practice	Use of voice through formal feedback e.g. student union, course boards, surveys etc
Control over institutes supported technologies	Deviant practices	Use of voice in informal feedback e.g. informal grumbling / complaints about others
Economic support of technologies and initiatives	Legitimising/judging practices of others	Engagements with technology platforms/systems
Language of technology / Communication of expectation	Holding of technological capital e.g. knowledge	
Control over technology support	Visibility of technology use	
Policy and strategy	Bottom-up innovations	
	Use of technologies outside of the organisation/open source	

Table 2 - Strategies for control / influence over technology practice

8.5.3. Influences on the field from the outside world

Bourdieu's own work with fields made use of four semi-autonomous levels of fields: 'the field of power, the broad field under consideration, the specific field, and social agents in the field as a field in themselves' (Thomson, 2012, p.79).

These participants conduct their practice in the academic field of the site of study. It sits within a broader field of Irish higher education, which itself sits within the field of power, the wider societal field, which consists of a range of actors including transnational organisations, technology companies, international educational providers, and various groupings of higher education stakeholders. These interrelated and interacting fields give rise to a doxa of technology that is communicated through a variety of policy and power networks operating in these fields, which negotiate, rework, and reshape policy and discourse with strategic intent (Williamson, 2019b).

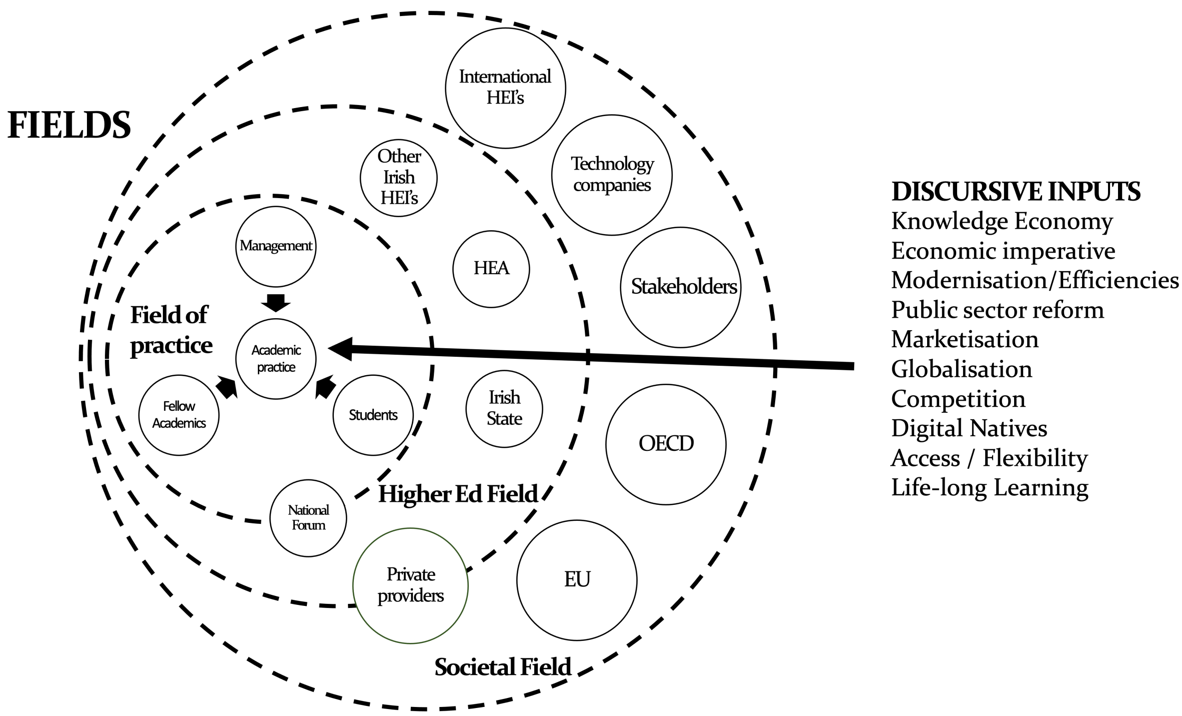

Figure 9 - Fields of Technology and Discursive Inputs

While participants were aware of these external networks, policy actors, and surrounding discourses of technology, they were repeatedly framed as being 'out there', something beyond the boundaries of the institution which had little direct influence over individual practice. I was sceptical of the participants dismissals of these external influences and viewed it as a form of misrecognition. Participants repeatedly failed to acknowledge the indirect influences that discourses and policies have as they move between macro, meso and micro levels of the education system. Trowler (2001) suggests that these wider discourses may have real impact on individual academic practice:

> *Discourse guides and sets limits on recurrent practices as well as on values, attitudes and taken-for-granted knowledge, so that 'social constitution' affects organizational practices in 'real' ways too.*
>
> (Trowler, 2001, p.187)

In examining the power of policy to influence practice directly, Coffield *et al*. note the power of educational policy when used in conjunction with policy 'levers':

> *way, we have not found evidence of the direct or simple transmission of policy into teaching practices. That is not to say that policy is powerless: far from it. For example, we have found that policy 'levers' such as targets and funding, when they work in combination, powerfully mould the behaviour of institutions and alter professional practice*
>
> (Coffield et al., 2007, p.736)

Interestingly participants such as Peter, Audrey and Ciaran exhibited knowledge of the new funding policy levers used in Ireland to link programme provision to technology use. Williamson (2019b) highlights the role of the new educational power networks and 'policy machines' in the formulation of fast policy and discursive change, impacting practice at all levels of education. Technologies themselves become vehicles for 'shadow policy' (Williamson, 2019b, p.2) as educational technologies reach directly into the heart of academics' pedagogic practice. New feature updates of products like Microsoft Teams, Zoom and the Google suite can quickly alter the pedagogic approach of academics at a pace not previously attainable by the use of policy alone. Technology companies emerge as influencers of practice. At the site of study, recent switches to Microsoft technologies resulted in the use of software platforms, which have first and foremost been designed for private enterprise. How these academics now teach online is someway constrained by product features and development roadmaps dictated by corporate interests.

In failing to acknowledge the power and influence exerted by these external forces, academics are blinded to the necessity for a critical challenge to the discursive outputs and ideological intent of a range of actors operating outside of their immediate educational milieu. The misrecognition of the influence that these external fields hold over the practices of the academy establishes a false sense of agency and a misguided belief that the logic of practice at the site had developed in the absence of outside interference. Participants subscribed to the notion that the internal norms of technological practice have been in the main, negotiated, normalised and validated by the academy.

The consideration of the data through the theoretical lenses of habitus, capital and field has provided a useful mechanism for developing further understanding of the socially constituted nature of academic practice. These new digital forms of practice are not simply a result of the participant's habitus, but 'rather of relations between one's habitus and one's current circumstances' (Maton, 2010, p.52). Habitus and resulting practices were structured by the field, and in turn, the technological practices of these academics as guided by habitus were structuring of the surrounding field. The relational nature of habitus and field has allowed us to see technology practices as evolving at both the level of the field and at the level of the practitioner, linking individual approaches to practice to the norms and values of the surrounding social space. Further understating of practice was gained through an examination of capital which had provided specific forms of agency and prestige to management, students and academics. As discussed in chapter 3, the failure to see these forms of capital as arbitrary and transubstantiated from economic capital is a form of 'misrecognition' and a type of 'symbolic violence'. In line with the advice of Jenkins (2006), an examination of symbolic violence, misrecognition, and illusio is offered in an effort to further understand the socially constituted nature of practice.

8.6. Symbolic violence and misrecognition

The recognition and accumulation of various forms of technological capital by individuals resulted in a hierarchical field of power relations in which some individuals were better placed than others. The understanding of the legitimisation of these unequal power relations is supported by the use of Bourdieu's linked concepts of symbolic violence and misrecognition. As discussed in chapter 3, symbolic violence is a form of domination that is used to maintain a social hierarchy. Bourdieu describes it as a 'gentle, invisible violence, unrecognised as such' (Bourdieu, 1990a, p.127). It legitimises these forms of arbitrary capital and allows those who possess them to maintain position in the field and to hold sway over the forms of capital which are recognised and valued. Linked to symbolic violence is the concept of 'misrecognition', a failure by agents to perceive symbolic violence for what it is, instead accepting it as the natural order of things. Examples of both symbolic violence and misrecognition were present in the data, supporting these forms of capital and the logic of technology practice within the local field of academia.

Perhaps the most obvious example of symbolic violence present in the data was the management-led imposition of technology on curriculum design and programme delivery. The management-led imposition of technology on academic programme delivery legitimised the need for academic staff to develop their digital skills and to alter their academic practice. Through their subsequent uses of technology, aspects of academic practice were exteriorised, and academics were moved further towards a culture of performativity (Ball, 2003). Academics accepted being alienated from their labour (Hall, 2018) as they reified and transformed their own knowledge for distribution on digital platforms, reducing themselves to being represented through learning objects which could be repurposed and reused, sometimes without their permission.

They accepted feelings of disconnect and disembodiment during online teaching, the removal of their individuality and their 'stories' from the digital space, and were moved into a new norm of technology in practice. Participants acknowledged the price to be paid in relation to intrusions on their time and space, as well as increases in workload. And yet, these impositions and resulting negative impacts were accepted by the participants through misrecognition, a failure to recognise the violence which was inflicted on them through technology. The use of technology was seen as a logical and necessary course of action, affecting not only their disciplines but much of higher education around them. The demands made by management were contextualised against the backdrop of the global education marketplace, a need to keep pace with the 'competition', and a need to satisfy the technology demands of the 'digital native' student. The absence of an appropriate workload model at the institute was misrecognised as a consequence of national norms and not attempts by local management to leverage greater academic outputs through technology. Changing student engagement patterns were explained away by the student's digital native nature and their 'always on' lifestyles. And so, we see a doxa of technology that met little in terms of critical commentary or resistance.

Another notable form of symbolic violence present in the data was the denial of access to specialist hardware and laptops for the support of practice. This form of symbolic violence was particularly evident in comparisons between academics in STEM disciplines who reported generous supports for the purchase of technology, and academics in the arts and humanities who reported struggle and conflict in their efforts to access technology. Julia's account highlighted her struggles to borrow essential equipment from her colleagues in an effort to give online lectures and seminars. Megan highlighted the inequality between staff members and fee-paying students as she contrasted her experience of having to purchase a personal laptop to support her work while her postgraduate student was given a new laptop by management. These were two standout examples of the technological discrimination of the arts and humanities in favour of STEM disciplines. Megan's shock and anger at discovering that academics in the engineering and computing disciplines had been provided with high-spec laptops highlighted a failure to challenge perceptions that STEM disciplines had more legitimate claims to technological capital.

The act of symbolic violence was not limited to the hierarchical relationships between management and academics. The data highlighted multiple accounts of symbolic violence inflicted on these participants by their fellow academics as well as by their students. Table 3 (below) lists some of the multiple examples present in the data.

Management	**Academics**	**Students**
Imposition of technology on the curriculum	Labelling of academics who reject technology	Complaining about individual academics use of technology
Failure to introduce workload models which account for technology	Denial of access to digital capital and knowledge	Demands for access to reified knowledge
Coercion of individuals into the use of technology	Acceptance and use of colleagues reified knowledge	Intrusions into academic time and personal spaces
Taking technology into account for career progression	Facilitation of the mandating of technology through programme design and academic quality assurance structures	Apportioning blame to individual academics for failures of technology systems
Failure to provide adequate technology supports		
Denial of access to hardware		

Table 3 - Sources and forms of symbolic violence

These forms of symbolic violence were masked by a misrecognition of the ideological positioning of technology. Technology is often framed as apolitical and neutral, serving the needs of an educational system in need of modernisation within a wider societal context of ubiquitous technology use. But why do these participants continue to accept these forms of violence? Daniel Schubert observes that those who experience symbolic violence are often "invested" or "interested" in the system that harms them, acting in ways that enable this violence:

> *It is then often in the best interests of agents, within the context of a given field, to act in ways that end up both lending credence to, and reproducing, the very symbolic systems of domination that are resulting in symbolic violence.*
>
> (Schubert, 2012, p.185)

I would suggest that these academics public service etic, their emotional and professional investment in their academic practice, and their attempts to mediate the tension between their needs, the needs of students, and the needs of the organisation, drives their engagement with technologies which ultimately contribute to their suffering of violence. The acceptance of this symbolic violence would appear to be supported by the illusio (rules of the game) and doxa (logic) of the academic field which are worthy of consideration in our efforts to gain further understanding into the effects of technology use on these participants.

8.7. The doxa of educational technology

> *"Let the jury consider their verdict," the King said, for about the twentieth time that day. "No, no!" said the Queen. "**Sentence first—verdict afterwards**."*
>
> (Carroll, 1992, p.141)

The above exchange from Lewis Carroll's 'Alice in Wonderland' is somewhat indicative of a strong determinist logic that underpinned much of the technology decision making at the site of study. Both at the individual level of practice and at the level of programme design, determinist thinking underpinned a doxa of technological enhancement that led to a culture of ‘technology first – evidence second’. The data highlighted multiple examples whereby individuals and programme teams had placed faith in the discourse of enhancement and had implemented technology based on truisms rather than informed evidence. As discussed in chapter 3, doxa can be thought of as an ‘objectively real truth’ which is ‘defended in orthodoxy, and attacked in heterodoxy’ and used to explain agents compliance with the rules of an ideology (Webb et al., 2010, p.96). In this case, the dominant doxa is the doxa of technological enhancement, illustrated in the data by the participants’ expressions of belief in the enhancing nature of technology. Participants articulate their ‘truths’ of technology, making education *better*, more *relevant*, more *interesting*, more *accessible*, and more *active*. Their beliefs on the enhancing and modernising nature of technology are filled with deterministic declarations which attribute a power of change to technology at the expense of their own agency, adopting a position that ‘using technology for teaching will in and of itself lead to enhanced or transformed educational practices’. (Kirkwood and Price, 2013a, p.313).

In this case, the doxa of technology and enhancement was strongly underpinned by a number of key discursive inputs which framed technology as an essential aspect of higher education. Some of these are shown in Table 4 (below).

Society	**Market**	**Organisation**	**Practice**	**Student**
Knowledge economy	Competitiveness	Output oriented	Modernisation	Consumer
Networked society	Globalisation	Value for taxpayer	Student centred	Digital Native
Modernity	Brand/image	Massification	Performative	Lifelong learner
Progress	Public vs Private	Rationalisation	Target driven	

Table 4 - Discursive interventions into the doxa of technology

Discourses such as these 'do not just describe things; they do things' (Potter and Wetherell, 1987, p.6), and in this case, the socially constitutive power of these common discourses has contributed to the development of the technopositivist culture of the site. The resulting doxa hindered rational and critical thinking, working 'to silence dissent and reduce most people to shutting up and putting up' (Selwyn, 2016c, p.441). The participant Peter who described technology as being '*within the fibres of the college*', reminds us that those who do speak up are labelled as 'conservative' and are 'ostracised' for adopting positions that run counter to the rationality of the doxa of technology. Selwyn (2012a) uses Clay Shirky's 'kayak' analogy to perfectly capture a sense of diminished agency as we are swept along by the dominant common-sense doxa of educational technology:

> *our control over tools is much more like steering a kayak. We are being pushed rapidly down a route largely determined by the technological environment. We have a small degree of control over the spread of these tools, but that control does not extend to being able to reverse, or even radically alter, the direction we're moving in. Our principle challenge is not to decide where we want to go but rather to stay upright as we go there.*
>
> *(Shirky, 2008, p.417)*

Participants can either choose to adapt to the inevitable technological change or to be left behind. Dorothy's proclamation of "*you can't fight city hall on it*" (Dorothy) was perhaps an admission of the inevitability of this change and an acceptance of the dominating logic of technology and its impact on academic agency.

8.8. The illusio of educational technology

> *Not purely, but it's part of the game. As I would see it, it's a little bit of a game in here ... and I don't say that kind of ... the word "game" kind of has probably a little bit negative, but that's the way it is and you have to play the game, I think, a little bit. You can't necessarily do that without using digital technologies and tools, because how else do you do it?* (Peter)

Forms of capital and doxa constitute behaviours and normative practices within a field. Bourdieu used the term 'illusio' to describe agent's recognition of the values and the forms of capital in a field and the strategies for succeeding within the field. He used the analogy of a game with rules to describe the behaviour of agents:

> "*Illusio is the fact of being caught up in and by the game, of believing the game is 'worth the candle', or more simply, that playing is worth the effort*" (Bourdieu, 1998, p.76).

Grenfell (2012) links illusio to Bourdieu's earlier writings on interest. He describes it as a form of strategy, 'habitus incarnate', which seeks to 'maximise profit' through capital accumulation while occurring in a medium that is 'saturated with values' (Grenfell, 2012, pp.155–156). If we consider the site of study using the analogy of a game, then the following rules might be applicable to the 'players':

EDUCATIONAL TECHNOLOGY – THE GAME

Rule 1: Technology should be integrated into academic practice to align with the normative practices and values of the technopositivist culture.

Rule 2: Make your use of technology visible to others (especially management). To be visible is to communicate your dispositions for technology and to gain recognition from colleagues and management.

Rule 3: Do not criticise or question the logic of practice. To do so may result in negative consequences.

Rule 4: Appease the students. The students need and want technology and will highlight your non-use of technology to others.

Figure 10 - Educational Technology - The rules of the game

The participants' accounts were filled with examples of academics who played by these rules in their efforts to accumulate the various forms of capital on offer. As discussed, the *alignment* of one's practices and values with the technological practices of this field and the expectations and norms of the field of power was a key imperative for academics. In this game, a key rule is to not only make use of technology, but to be seen to make use of technology for the benefit of the self. *Visibility* of the process of alignment is vitally important in efforts to accumulate capital. Capital is awarded to those who are recognised for their use of technology. For example, Fiona believed that her use of technology was a factor in her recent promotion. Ben, Barry and Donal felt that technology was an important factor in progressing from the assistant lecturer to lecturer pay scale. Ben, Peter and Fiona acknowledged the 'game' of using technology to improve academic profile and to gain the attention of management. Fiona recalled being advised by a colleague to adopt technology as a tool for self-promotion, while Ben felt it was important for staff seeking career progression. Visibility of use was noted by management, peers and students whom all held varying degrees of influence in supporting the doxa, which established the rules and norms of this game. The third rule of this game is to avoid open *criticism* of the culture. Fiona believed that her recent promotion would not be renewed if she subsequently criticised or rejected technology. Julia was worried that she would be 'called up for a discussion' with management if she rejected technology. Participants gave examples of colleagues who had been labelled, and to some degree, ostracised for their non-use of technology. The final rule was to *appease* the needs of students. While their voice was largely subordinate, students highlighted the non-use or poor usages of technology through various channels.

This game, like others, is somewhat competitive for both individual academics and their disciplines who compete for capital, legitimacy, and position within the academic field. Leo described the competitive struggle for technology resources as being won by the larger and more technologically oriented disciplines "*they shout loudest, 'We want this, we want that.' They'll get it*" (Leo). As highlighted previously, academics from the fields of arts and humanities were acutely aware that they were 'losing' in the game for access to some technologies. Whether they are 'shouting' about this is an unknown, and it may be that these academics had failed to clearly articulate their technology needs to management. While individual competitiveness did not appear to be a widespread feature of the local culture, participants felt that those individuals who held onto their technological capital were doing so out of self-interest and a degree of academic competitiveness.

8.9. Summary

Bourdieu's theory of practice has provided a sociological lens for the consideration of technology use in academic practice, highlighting the effect of the surrounding social milieu on these participants practices. Building on the previous discussion chapter, which explored issues of practice, effect and belief, this chapter has sought to provide an understanding of the interplay between the dispositions of the participants, their understandings of the rules and logics of the field, and the forms of capital available to participants through their use of technology in practice. I have used the work of Bourdieu as a conceptual lens to gain a better understanding of their world, affording me the benefit of a broadening of the research focus beyond the specific focus of study (Reay, 2004). This chapter has highlighted the key struggles and forms of capital which are competed for in the field. While we may be critical of these apparently competitive and self-serving approaches to technology, our examination of capital, of doxa, and illusio, may help explain these behaviours. Symbolic forms of capital are presented as altruistic, suppressing their instrumentalist nature by 'proclaiming themselves to be disinterested and of intrinsic worth' (Moore, 2010, p.103), and these participants may have felt that their acquisition of these forms of capital resulted as a consequence of acting in the best interest of the students and an institution which relied on technology. Misrecognition obscures the arbitrary nature of technology's doxa and illusio and the participants viewed their applications of technology, their beliefs about technology, and their behaviours with technology as rational and within the understood norms and practices of the field. Challenging or destabilising these forms of capital, doxa and illusio is difficult when they appear as common sense to academics. Deer (2014) suggests that the development of a heterodoxy requires recognition of the possibility for competing beliefs and logics and that this may be achieved through reflexivity and a critical questioning of the orthodoxy of technology. We must consider challenging the language of enhancement, the truism of the digital native, the colonisation of pedagogy by technology, the role of managerialism, the disciplining effect of policy, and the arbitrary nature of the forms of capital which, through their pursuit, result in the forms of symbolic violence highlighted in these discussions. Most importantly, questions that relate to the 'how' of technology must be replaced by a questioning of the 'why' of technology.

In the next chapter I will draw together the conclusions from this study and provide some final reflections on my research journey.

CHAPTER 9 | CONCLUSIONS & REFLECTIONS

9.1. Introduction

This thesis has contributed to a limited body of qualitative research that seeks to improve our understanding of educational technology's impact on academic practice. It is noteworthy insofar as no known previously published work has specifically focused on providing a context-rich deep understanding of academic technology practice in an Irish higher education setting. The work is timely as it occurs during a period of sectoral transformation emerging from the establishment of Ireland’s first Technological University. It is also timely as the work has partly taken place during the COVID-19 pandemic, an event that has necessitated an accelerated digitisation of academic practice at a time of global crisis.

The thesis sits in opposition to commentaries which claim a lack of change in academic practice and instead argues that academic work is undergoing meaningful change linked to the ongoing digitisation of higher education. The process of change has been a tale of gradualism over revolution (Kirkup and Kirkwood, 2005), a slow-moving transition that has brought technology to almost every facet of academic activity. Perhaps most importantly, most of these participants see their technology use as a process of practice change.

The thesis also evidences the effects of technology on the individual. The use of technology subjects these academics to the ‘the hidden injuries of neoliberal academia’ (Gill, 2009), bringing with it the transformation of work, the intensification of work, and alterations to the boundaries of work. The affective consequences of these changes manifest themselves in differing ways. Most notably, this study frames technology use as a form of emotional labour. Our understandings of the emotional labours of educational technology are limited (Bennett, 2014) and a greater attention to emotional effect is called for. Effects are also evidenced in the link between technology and ‘learnification’ (Biesta, 2004) and a response of reification which has exteriorised academic activity, alienated academics from their labour, and ultimately drawn academics further into a culture of performativity (Ball, 2003). The thesis has also highlighted the importance of considering identity as part of the technology change process, as evidenced by the destabilising and emotional challenges that emerged due to the ongoing digitisation of practice.

The application of Bourdieu’s conceptual tools has provided an insight into the ‘messy’ realities of educational technology (Selwyn, 2012a, p.93) by asking the ‘messy questions of social theory’ (Sterne, 2003, p.93). Indeed ‘messiness’ has emerged as a subtheme of a thesis that has highlighted the messy and complex nature of academic technology adoption and practice. The thesis argues that academic technology use is shaped by multiple influencing factors which include individual beliefs, conceptions of teaching, identity, discourse, policy levers, and the deeply structuring educational milieu.

Finally, the thesis has highlighted technology as a site of struggle. A space of conflicting academic and managerial ideologies, in which struggle takes place over the curriculum, control of technology, the legitimacy of technology knowledge, and ultimately, academic autonomy in technology use.

In concluding this thesis, this chapter aims to provide the reader with a summary of the key findings of the study as guided by the core research questions which were set out in chapter 1. The chapter also provides a discussion on perceived limitations of the study and recommendations for future work.

9.2. A revisit to the approach taken to the study

The overall aim of the research presented in this thesis was to explore the lived experiences of a sample of academics with regard to educational technology. In doing so, the study set about to examine educational technology from a critical perspective, recognising it as potentially problematic (Castañeda and Selwyn, 2018), worthy of investigation along social scientific lines. The approach to the study has been inspired by Neil Selwyn's call for a keener interest in 'the social, political, economic, cultural and historical contexts within which educational technology use (and non-use) is located' (Selwyn, 2010, p.66). The study deliberately set out to avoid instrumentalist approaches to the understanding of the uses of technology in practice which too often separate the technical from the social (Bayne, 2015). Instead, this study recognised the socially constituted nature of educational technology and sought out better understandings of the influence of the surrounding socio-cultural setting in which the academic and technology are located.

The study adopted an interpretivist stance with the primary goal of generating interpretation, meaning and illumination from the study data (Scott and Usher, 2002). The study utilised a qualitative case study approach (Yin, 2009; Stake, 1995) based on a single site of study. In using my own workplace as a site of investigation, I adopted the role of the 'insider researcher' in the belief that my own experiences and knowledge of the organisation assisted me in the formulation of the research question, the identification of participants, and the co-construction of meaning and findings through a shared identity, language, and experiential base with the participants (Asselin, 2003, p.100). The research instruments used in the investigation of the guiding questions included document analysis and semi-structured interviews, with fifteen participants selected using a purposeful sampling approach that considered selection factors such as gender, age, career stage, and academic discipline. Interviews with these participants aimed for the generation of rich thick descriptions that were thematically analysed using the six-step process of Braun and Clarke (2006). All transcribed interviews, documentation and observations were added to NVIVO qualitative data analysis software (QDAS) for in-depth analysis prior to the setting out of findings and the transition into discussions.

I was keen that this study contribute to efforts seeking to redress the deficiency of studies in the field of educational technology that make meaningful use of theory to frame and inform research (Bennett and Oliver, 2011). In seeking to understand the use of educational technology in academic practice, I leveraged the theories and concepts of Pierre Bourdieu, and in particular, his interlocking and well-known concepts of 'habitus', 'capital' and 'field' as used in his formulaic approach in describing practice (Bourdieu, 1984). In being guided by Bourdieu, I am cognisant of my novice status in engaging with his writing and make no claims towards being an authority on his notable body of work. Rather, I have benefitted from his theories and concepts in the definition of the object of study, the approach to analysis, and the path taken through my discussion in my attempts to understand the messy realities of educational technology use.

9.3. Reflections on the guiding research questions

As stated, this study set out to explore the lived experiences of a sample of academics with regard to educational technology, generating understanding of its effects on their practice, exploring their beliefs as they relate to technology, and interrogating their understanding of how technology's use (and non-use) affects their educational setting.

The guiding research questions for this study were:

1. How has educational technology influenced the practice of academics?
2. What values and beliefs do academics hold regarding the use of educational technology in practice?
3. What are the perceived effects of educational technology?
4. What difficulties and tensions do academics report in their use of educational technology?
5. What factors influence academics in their decisions to adopt educational technology?

This section will now draw the two discussion chapters together in an attempt to detail and discuss the key findings in relation to each of the guiding research questions.

9.3.1.How has educational technology influenced the practice of academics?

This study has been carried out against a backdrop of discourse that criticises higher education for a lack of technological driven transformative change. As highlighted in chapter 2, an extensive network of policy actors and commentators frame academics as technological luddites for failing to grasp the technologically afforded opportunities of improved productivity, efficiency, modernisation, and transformation. A series of critical commentaries (European Commission, 2018; OECD, 2016; National Forum, 2014; National Forum, 2015) claim that academics in Ireland have failed to allow technology to disrupt and transform practice. The extent to which technology is expected to transform higher education and academic practice remains ill-defined within the pages of these commentaries. In some instances, it would seem that only a complete technological driven reconceptualisation of higher educational provision coupled with a redefinition of academic practice and identity would be deemed a success. The absence of any such sudden radical process of transformation is perhaps to blame for a misrecognition of the extent to which these academics use technology to redefine, modify and augment elements of academic practice. These academics are certainly not technological luddites, but rather they make meaningful and deliberate use of technology in a variety of practice contexts. While face-to-face teaching practice may remain somewhat unchanged, largely due to archaic workload allocation models and outdated administrative conceptions of teaching, we see increasing uses of technology in support of face-to-face and online teaching. These uses of technology do not represent a sudden radical reconstruction of academic practice or identity; rather they reflect an approach of gradualism over revolution (Kirkup and Kirkwood, 2005), an ongoing integration of technology into varying aspects of practice.

Does the inclusion of technology into academic work constitute practice change or simply a change in the means by which practice is actualised? A definitive answer to this question might be best approached through longitudinal interrogations and observations of academic practice (see Englund et al., 2017). In the absence of such data, this study relied on the participants perceptions of change to conceptions of teaching and approaches to technology. The study has shown that many participants had previously adopted technology-led conceptions of technology use in teaching (Kirkwood and Price, 2012), deterministic perspectives that focused on the affordances of technology and assumptions that technology would in itself drive desired change. Technology-led conceptions were coupled with teacher-centric transmissive pedagogies and content-led conceptions of teaching (Kember and Kwan, 2000), an approach that mirrored existing classroom-based didactic teaching practice. Changing conceptualisations of teaching away from teacher-centric transmissive pedagogies is far from easy (Trigwell and Prosser, 1996) and requires reflexivity and agential action in the conscious act of altering the way one teaches. In this case, technology appeared to have acted as a catalyst for change through resulting reflexivity, as participants confronted the discordance between their conceptions of teaching, their pedagogic repertoires and the actuality of technology use.

Several participants' early forays into technology use resulted in failure and frustration. In most cases, failures resulted from the attempted application of ill-fitting transmissive approaches to teaching through technology, while others failed due to a reliance on assumptions and pseudo theory in the amalgamation of technology and pedagogy. Negative experiences for academics and students prompted varying degrees of reflexivity and a questioning of the role that technology played in mediating the relationship between educator and student (Somekh, 2008). Technology was gradually recognised as a destabilising force on practice and identity as it challenged the place of the academic as the focal point of the teaching experience. In response to this challenge, many of the participants are in the process of a deliberate move towards more student-centric facilitative modes of teaching (Kember and Kwan, 2000) and frame technology as both a rationale and mechanism for the introduction of blended and flipped pedagogies. Technology has played in a role in the *means* by which teaching is conducted as well as *how* it is conducted by these academics.

Most importantly, many of the participants recognise their own role in the utilisation of new pedagogies and are gradually moving away from earlier deterministic conceptions of teaching through technology. While not all of the participants have consciously altered their teaching practice, the majority appear to be moving towards a reconceptualisation of teaching in a post-digital practice space, recognising the ubiquitous and almost routine nature of technology in the teaching environment. In adopting this stance, greater attention is now given to pedagogy, along with the realisation that it is not technology but rather the conscious decision making of the academic which alters the teaching experience.

9.3.2. What values and beliefs do academics hold regarding the use of educational technology in practice?

As discussed in chapter 2, conceptualisations and approaches to teaching with technology are strongly influenced by underlying belief systems and implicitly held knowledge about teaching. One might assume that academics' teaching practice would be guided by empirical evidence, learning theory, and forms of knowledge that validate and inform the use of technology. Yet as shown in this study, these academics placed little value in engagements with learning theories and empirical knowledge as they related to the use of technology. Instead, these participants were largely guided in their use of technology by a range of beliefs that were underpinned by assumptions, technological truisms, pseudo theories and folk pedagogies (Olson and Bruner, 2008). Their integration of technology into teaching was strongly mediated by a combination of tacit knowledge and a range of overlapping beliefs about technology's role in the teaching process, their students, societal expectations, and the institution. A selection of these previously discussed beliefs drawn from participant accounts is shown in Figure 11.

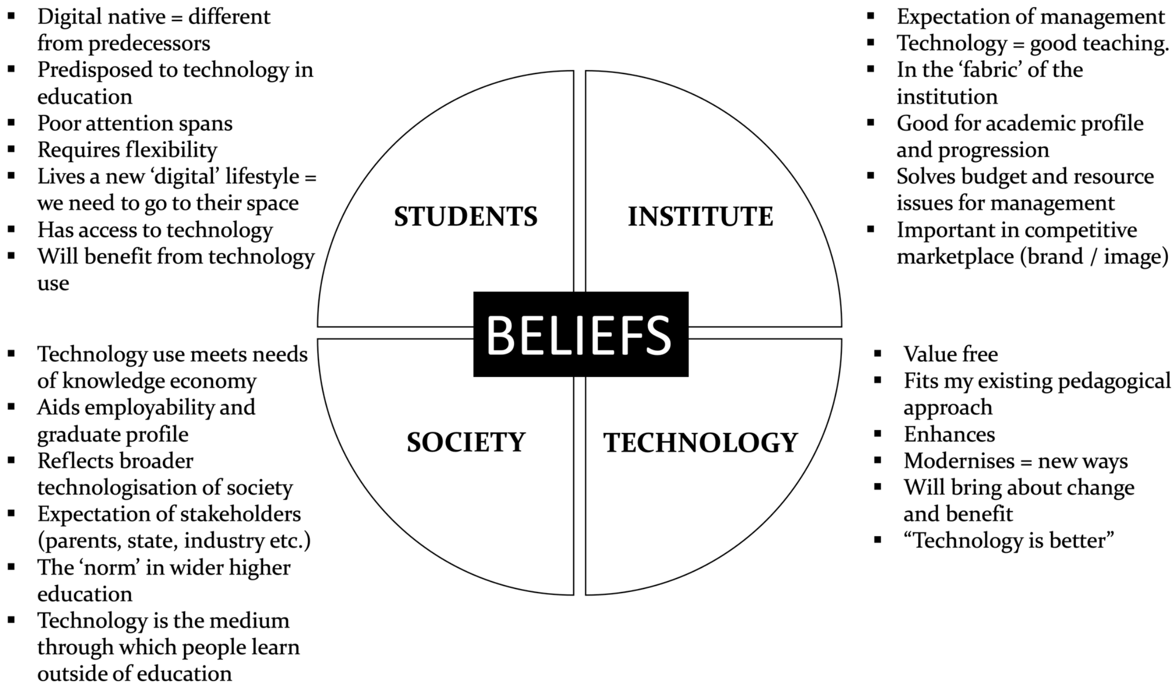

Figure 11 - Beliefs which support our technology use

These beliefs acted as 'lenses' through which the use of technology was mediated by the individual (Hammond, 2011). They were constituted in the socio-cultural setting (Somekh, 2008), co-constructed by academics, students, management, and the 'cultural tools' of the outside world which shaped and constrained belief through policy, discourse and action. Many of these participant beliefs had gone unchallenged and uninterrogated, with the vacuum left by the absence of theory and empirical evidence being filled with truisms and generalisations. To challenge this imbalance, academics might tap into the university's dialogical nature, opening up critical discursive spaces that may offer the potential to be captured by alternative discourses of technology (Trowler, 2001).

9.3.3. *What are the perceived effects of educational technology?*

When considering the interplay between technology and education, we tend to conceptualise 'effect' in respect of the outcomes resulting from the technological intervention. For example, what 'effect' did technology have on the performance, satisfaction, engagement, or the retention of students? However, as this study has demonstrated, the effects of technology extend further than the actualities of the educational outcomes for students or changes in the means by which we teach. This study has highlighted a range of effects of technology adoption, which impact the academic's wellbeing, emotional state, identify, and sense of place. We must be cognisant of these often-underreported effects and their ability to impinge on the individual's continued use of technology. A selection of these previously discussed effects drawn from participant accounts is shown in Figure 12.

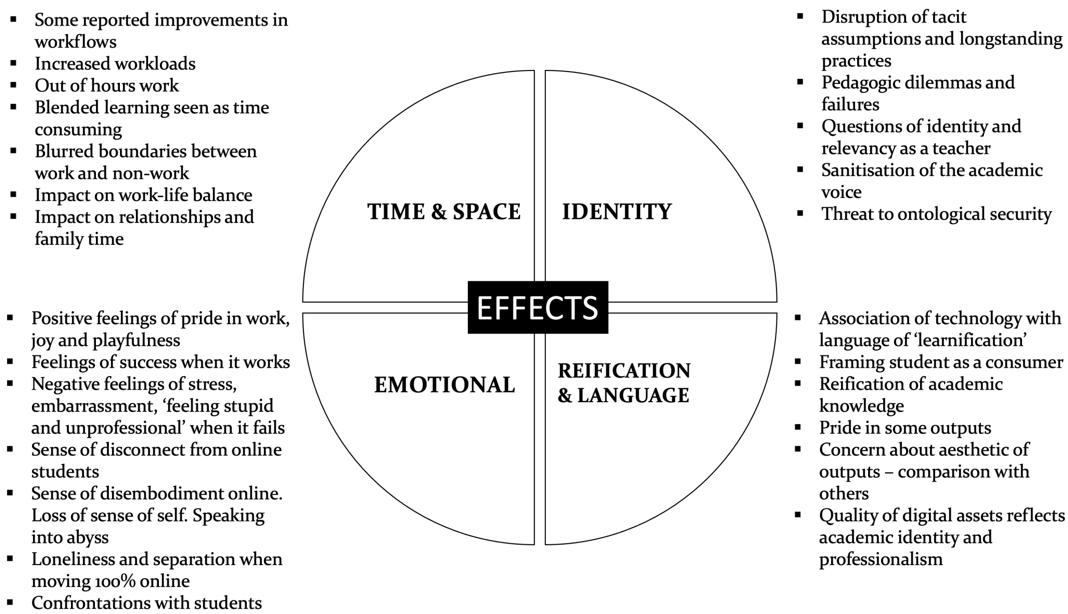

Figure 12 - Effects of Technology

These effects warrant a greater level of attention and understanding. In particular, empirical research into the emotional effects associated with technology adoption in higher education is lacking (Naylor and Nyanjom, 2020; Bennett, 2014). The absence of an acknowledgement of these effects deprives us of an understanding of their impact and downplays their importance as a barrier to technology adoption. Perhaps the majority of these effects can only be dealt with through a process of reflection, knowledge sharing, and dialogue which seeks out a more equitable experience for all users of technology. In an academic culture that thrives on the optics of success, do we create spaces for academics to acknowledge struggle and the effects of technology on the individual? I would contend that discursive spaces would be of immense benefit to academics, particularly during moments of transition into technology use, acknowledging tensions between technology and changing practices and identities. Such dialogic spaces offer possibilities for the cooperative development of strategies for coping with and mitigating against negative effect. For example, it was notable that the participants learned a great deal about technology through their peers, but there was little evidence that knowledge sharing included discissions on negative effects and suggested strategies for coping with them. Formalised spaces may also have a role to play in acknowledging and counteracting negative effect. Rather than focusing solely on issues of technology and pedagogy, could professional development programmes for academics confront oncoming challenges to identity, concerns over reification and exteriorisation, and prepare academics for the emotional impacts associated with transitions into technology practice?

9.3.4. *What difficulties and tensions do academics report in their use of educational technology?*

The study has shown that academics are confronted with a number of key tensions that pose dilemmas for the individual when considering the use of technology in practice. A key tension shown in Figure 13 is the negotiation between fear and doxa. As highlighted in chapter 8, the decision to adopt technology is supported by a strong doxa or logic of technology which is prevalent in the organisational culture. The non-use of technology becomes

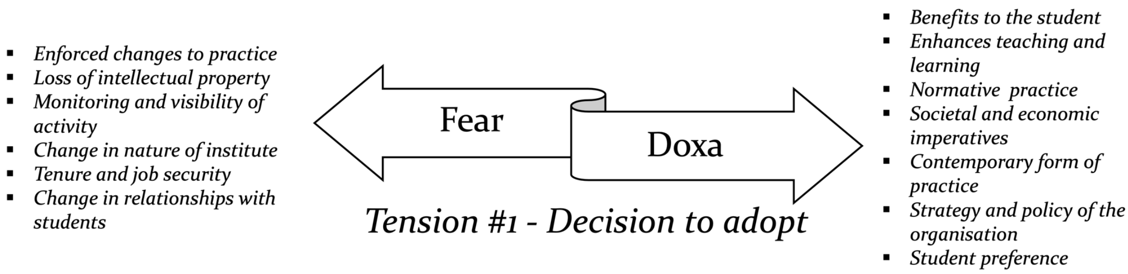

Figure 13 – Tension 1: Decision to adopt

an 'improbable practice' (Bourdieu, 1990a, p.54) as technology is portrayed as an enhancing presence in the educational experience, benefitting students, meeting the expectations of management, and aligning with internal and external discourses which frame it as a necessary element of the higher education experience. The technopositivist culture of the organisation encouraged academics to adopt technology, and yet tensions emerged. As highlighted in the findings, participants were concerned that technology would be used as a vehicle to undermine job security, to transform working conditions, to exteriorise activity, to draw academia further into a practice of performativity, and to alter the mission of the institution. Thus, we saw a guarded use of technology, a willingness to accept technology into practice while mindful of its potential to bring about unwanted changes for the academy and their ways of working.

Linked to this apprehension of undesired transformation was the tension that arose due to the challenges posed by technology to academic identity. Many of these participants identities were rooted in a self-conceptualisation of an

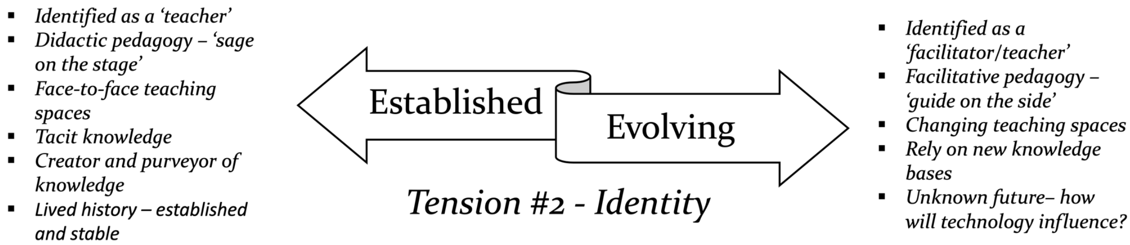

Figure 14 - Tension 2: Identity

academic teacher, centric to traditional didactic face-to-face teaching which takes place in the various lecture halls and classrooms of the campus. Teaching is not just something that these participants do, it is who they know themselves to be. Their own sense of self-identity had been shaped reflexively through "organised endeavour' (Henkel, 2000, p.14), an ongoing cognitive, emotional, and moral work (McNaughton and Billot, 2016) which was disturbed by the challenges that technology poses to the process of teaching and what it means to be a teacher. The academic's long-standing role and image are disturbed by new technologies, changing teaching spaces, new pedagogies, new ways of working, and an uncertain future. In confronting identity change and its link to practice, academics were faced with an unenviable choice, either accept technology-driven change or try to hold onto existing practices and one's sense of identity and in doing so, face the risk of being left behind (Friesen, 2008).

Academic identities are also linked to institutional values and practices (Winter, 2009) and academic disciplines (Henkel, 2005). In an effort to mediate between autonomy and organisational norms, these academics attempted to hold control over elements of their practices while attempting to align themselves to the broader organisational culture of technology use. This tension was illustrated in the struggles between academics and management for the control of technology and its application in the curriculum.

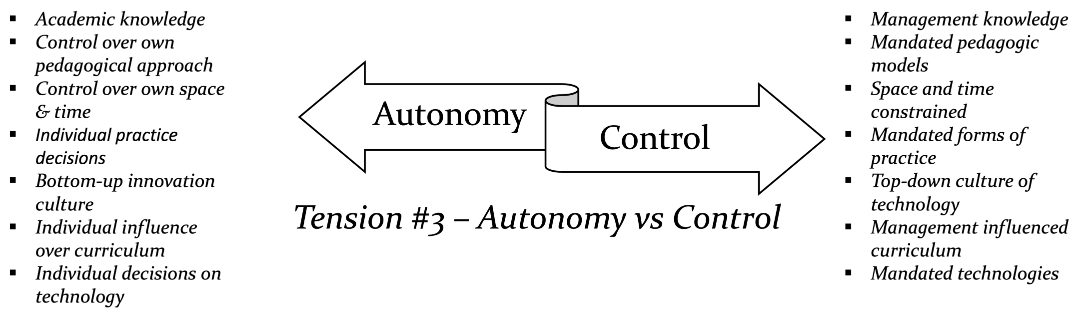

Figure 15 – Tension 3: Autonomy vs Control

While autonomy was demanded, there was also a recognition among these academics for the necessity of technology governance and a requirement for technology leadership and the need for centralised support. These academics seek a bridge between autonomy and control, a space where individual autonomy over technology use is legitimised, and the academic voice may contribute to the shaping of top-down technology innovation and intent. It is hoped that improved leadership and systematic approaches to technology would facilitate a meeting of top-down and bottom-up technological innovation, respecting the need for both individual autonomy and organisational governance in a manner that encourages the development of an egalitarian culture of technology.

Tension was also observed in the divide between academic ideals and the perceived ideals of those in power who advocate for increased technology use. Ideological schisms emerged as academics framed technology as a mechanism in the advancement of a neoliberal transformation of higher education.

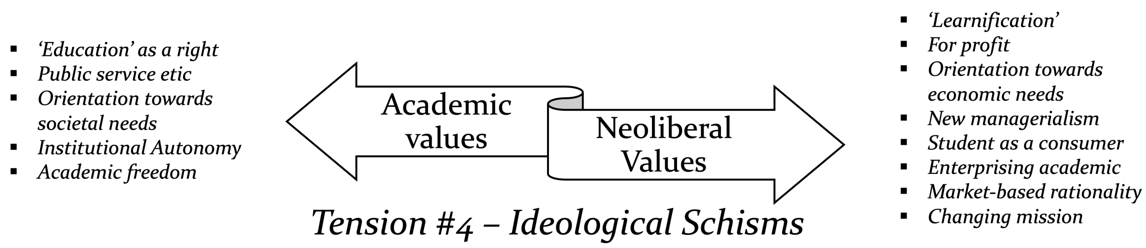

Figure 16 - Tension 4: Ideological Schisms

Many of the earlier discussed fears of these academics are linked to neoliberal discourses of knowledge commodification, marketisation, performativity, and the emergence of the corporate university. As discussed in chapter 2, educational technology plays an important role in defence of neoliberal ideology (Feenberg, 2017), and these participants were cognisant that their use of technology might advance a neoliberal agenda, drawing them away from the public service etic in contributing to a technological driven change in the ethos of the institute.

It is important to note that many of these academics were aware of these different tensions. While they had been captured to varying degrees by the logic and orthodoxies of technology, they were also cognisant of the challenges that technology brings to ideals, practice, identity, and agency. These challenges were perhaps responsible for an approach of gradualism over revolution, a guarded and slow take-up of technology. To the policymaker, these tensions may constitute a barrier to change which must be addressed if the grand scheme of technological practice change is to be progressed. To the critical researcher, an opportunity for reflection and challenge, providing a crack in the orthodoxy of technology which may be exploited in the endeavour to open critical discursive spaces for the exploration of alternative discourses and heterodoxies.

Finally, as highlighted in the discussion, these participants faced a number of barriers of deficiency which further inhibited efforts to integrate technology into practice. These have been discussed in the findings and discussion chapters and are visualised below in Figure 17.

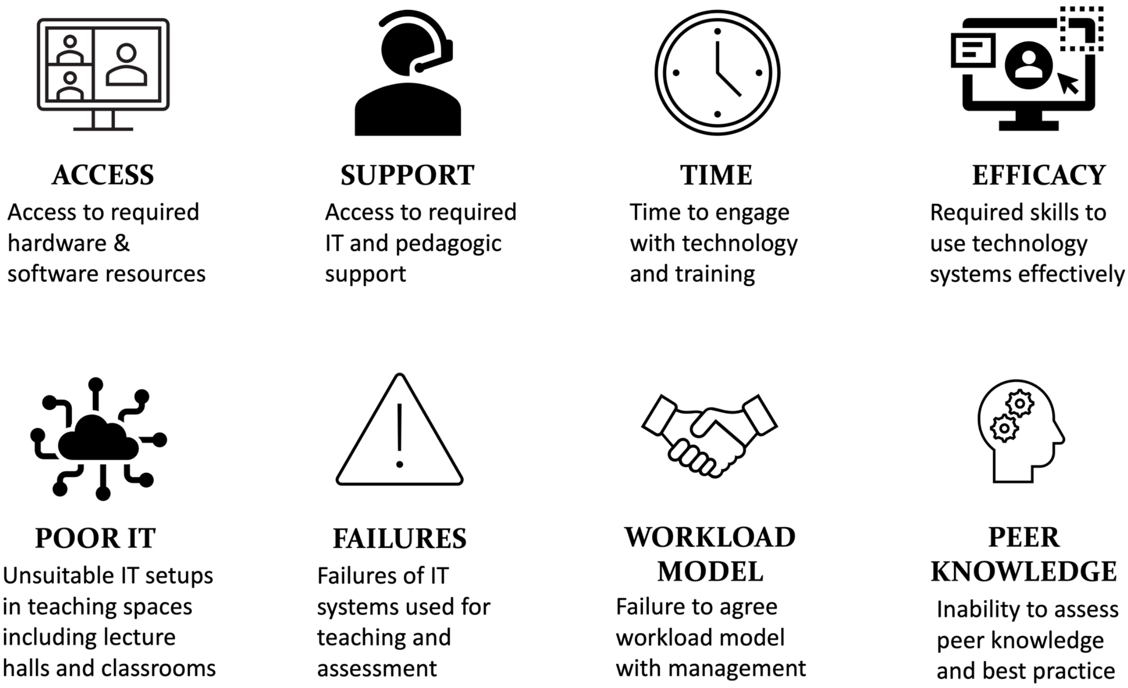

Figure 17 - Barriers of Deficiency

As highlighted in chapter 2, the majority of these barriers are commonly reported in the literature. Their presence in this study is a reminder of the continuing need to provide academic staff with the required training, infrastructure and supports necessary to facilitate meaningful technology use and practice change.

9.3.5. *What factors influence academics in their decisions to adopt educational technology?*

The participants in this study could not be considered a homogenous group in terms of their respective academic disciplines, career stages, technological efficacy, and conceptualisations of teaching. And yet this study illustrates a common set of influences that shape and constrain their uses of technology in teaching practice. A key influence is the individual's dispositions, beliefs, knowledge, and conceptualisations of teaching with technology which shapes the individual habitus. The participants held a broadly positive *disposition* towards technology use supported by a previously described range of *beliefs* which act as a strong influence on practice (Pajares, 1992; Nespor, 1987). These were combined with participant accounts of what they *know* about technology, its suitability for their subject content, and the pedagogies which they deemed applicable. Finally, their practices with technology were influenced by their *conceptualisations* of teaching, and in particular, their beliefs regarding the role of the academic in the teaching process. As shown in the data, these conceptualisations were strongly influenced by folk pedagogies and pseudo-theories, with the participants comfortable in their use of tacit knowledges and a 'feel' for what worked in their utilisation of technology. The four shaping influences of the habitus are shown in Figure 18 (below):

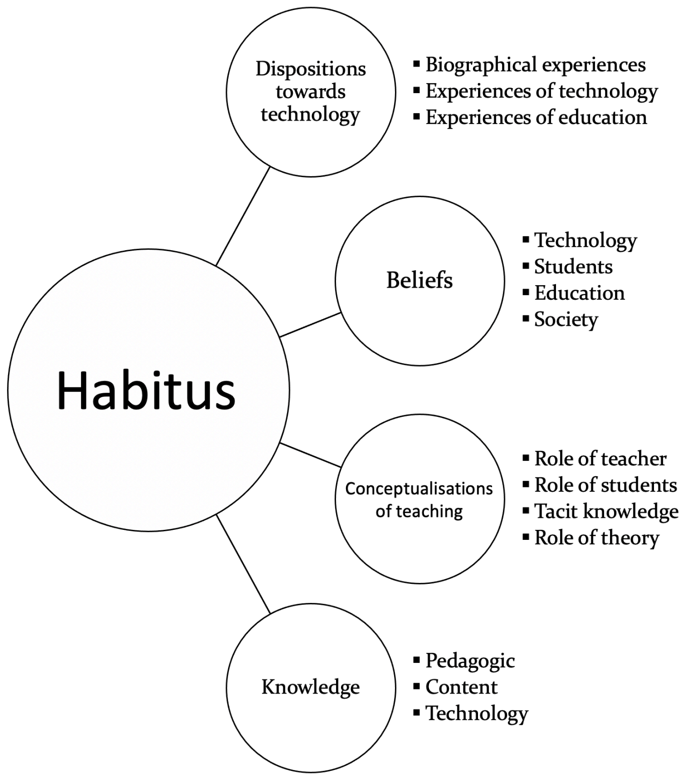

Figure 18 - Influences of the habitus

Attempts to understand the factors that influenced adoption were furthered by a recognition of educational technology as a social technology, whereby its constitution, application, and understanding is dependent on inter-locking cultural, social and organisational contexts (Somekh, 2008). The examination of surrounding socio-cultural spaces, systems and structures benefitted from the use of Bourdieu's Theory of Practice (Bourdieu, 1977) which allowed for an examination of the social milieu from which academic and technology are inseparable. As discussed in chapter 8, the organisational culture and field acted as a key influence on academic technology practice in this study. The influence of an arrangement of *hierarchised actors* within the field, occupying roles of management, academic and student, held sway over expectations and norms of academic technology practice. These actors established a hegemony of technology which acted as a guiding influence over academic decisions to adopt technology in practice. As discussed in chapter 8, each of these categories of actors employed differing strategies in advancing their goals with regard to sustaining the positivist culture of technology. The influence of these actors helped develop a *doxa* of the field, an orthodoxy of technology that framed technology as an enhancing element in all aspects of the education system. This doxa was supported by the socially constitutive power of discourse, policy, and external structures and systems that shaped behaviours and normative practices within the field.

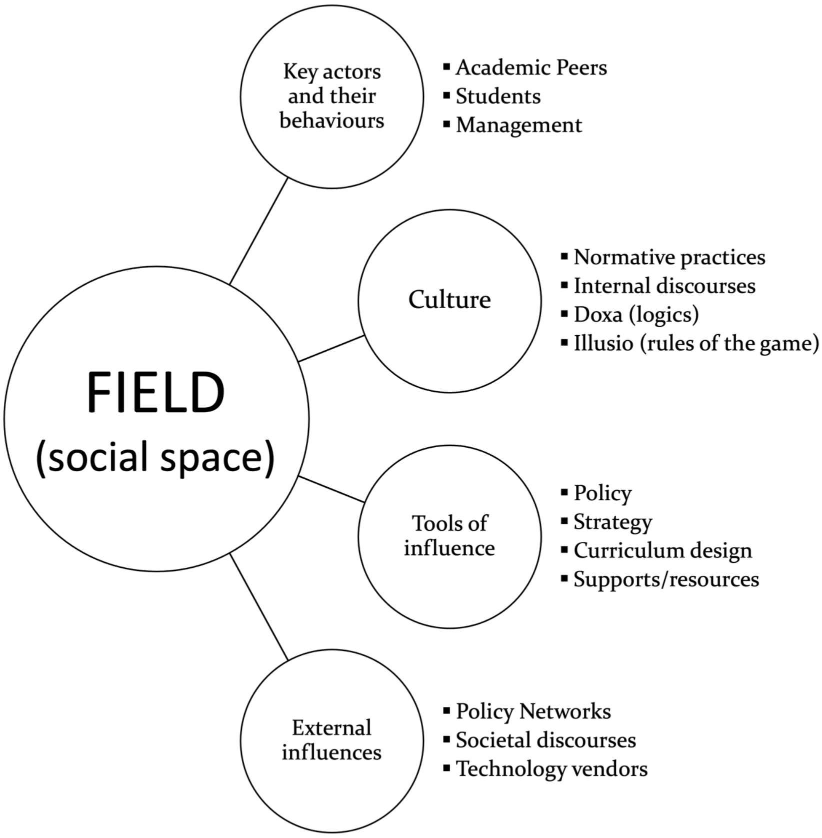

Figure 19 - Influence of the Field

Our final influence on practice was the influence of technological capital, which has been described as both a subset of and addition to, Bourdieu's forms of capital (Selwyn, 2004). As discussed in chapter 3, Bourdieu uses the term 'capital' to describe specific forms of agency and prestige, which are distributed and valued among the participants in a field (Sterne, 2003). At the outset of this study, I held the view that these academics primary motivation for the use of technology was largely altruistic, based on a belief that technology use was for the betterment of their students and the education system in which they work. I still hold that view, having engaged with a group of educators who are deeply passionate about their students and the advantages that technology can afford them. However, there is little doubt that various forms of capital play a role in the adoption and continued use of technology. As described in chapter 8, acknowledgement and recognition of those using technology represents a form of *symbolic capital* (Bourdieu, 1977). This form of capital is attained through recognition by management, students, and peers for the use of technology and the alignment of oneself to the norms of technological practice. Technology and this form of symbolic capital were a factor in assessing academic progression and promotion, meaning that the attainment of symbolic capital opens possibilities for the further attainment of economic capital. Others forms of capital such as *social* capital played lesser roles but were still factors in adoption and use.

These various forms of capital and examples of each are shown in Figure 20:

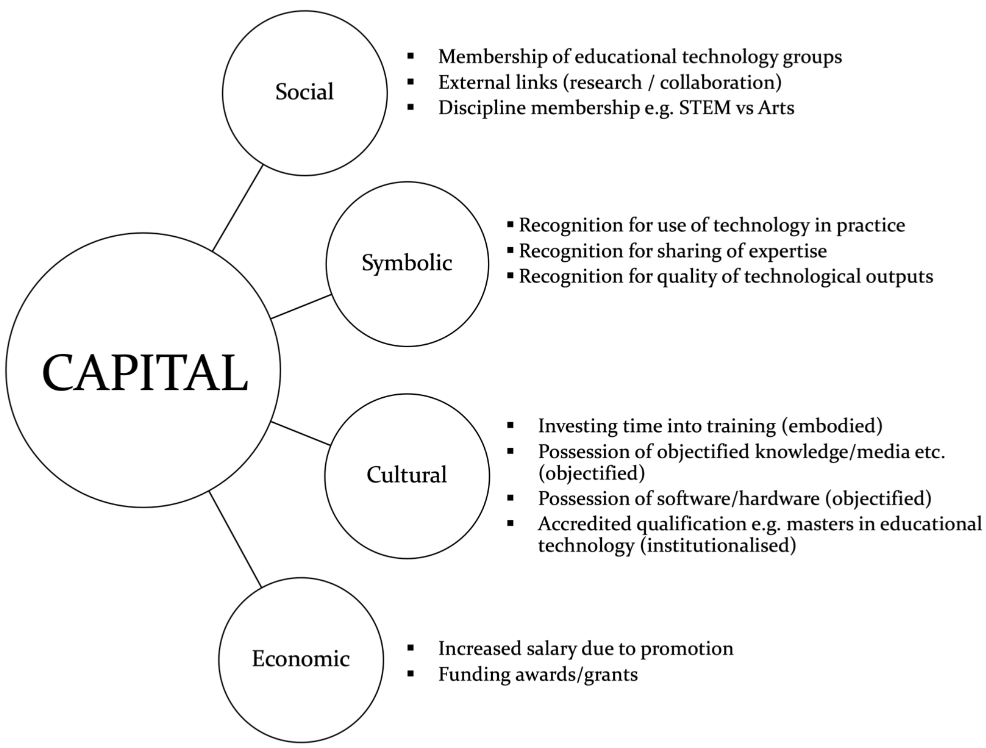

Figure 20 - Influence of Capital

Bourdieu was a key practice theorist, and in the application of his theory of practice, I have placed a deliberate emphasis on educational technology as a social construction, recognising the importance of the influencing social space in which practice is socially constituted. Through examinations of the participants' accounts of practice, I have interrogated individual dispositions towards technology, lived history, influencing beliefs, and the individuals conceptualisations of teaching and learning with technology. These positionings were then understood in the context of the surrounding social space, seeing the interplay between structure and agency as practice was shaped by the various forms of capital valued within the field of practice. Finally, practice was understood as being influenced by a network of actors within the local field and the fields that surrounded it, influenced by culture, power, politics, discourse, and ideology. Through the deliberate widening of the sociological gaze, we may understand the social shaping of technology and practice as both an endeavour of the individual and the surrounding social spaces:

> *...one has to return to practice, the site of the dialectic of opus operatum and modus operandi; of objectified products and incorporated products of historical practice; of structures and habitus.*
>
> (Bourdieu, 1990a, p.52)

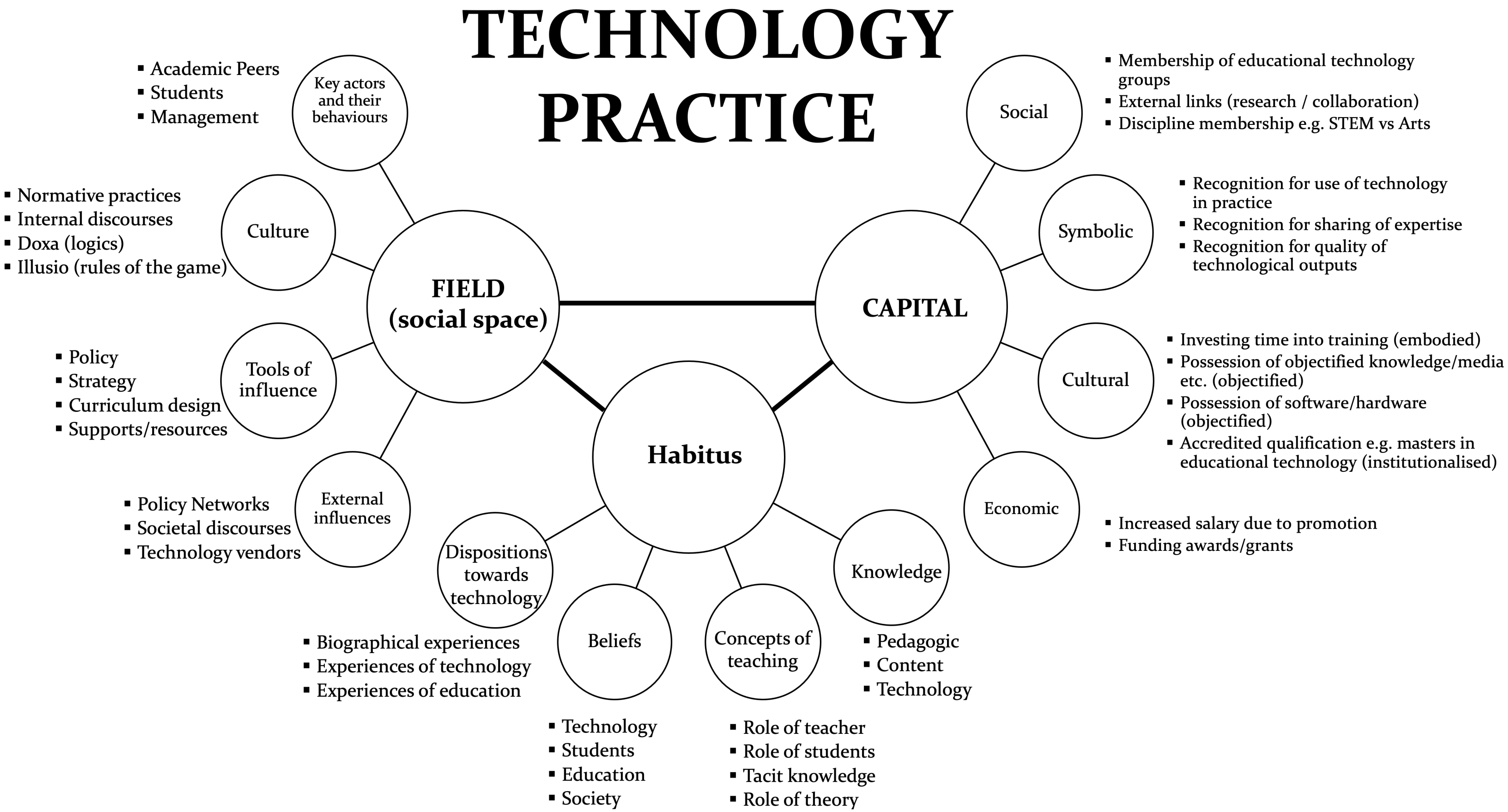

Figure 21 – The social shaping of technology practice

9.4. Reflections on the study

It is somewhat difficult for an educational technologist to take a critical stance in investigating the effects of their own work. It may be seen as somewhat of a self-defeating exercise. Technology has been good to me. I've travelled the globe, won industry awards, had my own features in technology magazines, all before joining academia and benefitting from my ability to implement technology solutions and to convince others of the upsides of technology. In the last eighteen years I have introduced and mainstreamed technologies which have transformed programme provision, opened up access to new student demographics and markets, impacted academic practice, and changed the educational experience for thousands of students. I became so synonymous with technology that my academic colleagues nicknamed me 'Danny McMoodle' (which I still hope was a term of playful endearment). This might all sound a little egotistical, but for an educational technologist it's easy to surround yourself with self-affirming metrics such as page hits, user counts, server traffic, and mobile app installs, all of which convey a sense of impact and progress through your work with technology. And yet for the educational technologist, these self-validating metrics may shield us from critical examination and obscure the hidden effects of technology on our colleagues and their students, effects which I was content to leave largely uninterrogated in the belief that technology had no downside. As far as I was concerned, everybody was a winner with technology, especially me.

My journey to this study began with a chance reading of an editorial by Neil Selwyn entitled 'Minding our language: why education and technology is full of bullshit … and what might be done about it' (Selwyn, 2016c). Selwyn highlights the problematic traits of 'ed-tech speak', its exaggerated claims, hidden values, and political nature. This reading prompted my first critical moment, a reflection on my own past work as a technologist, resulting in an acknowledgement of hyperbole in my prior assertions and a recognition of my acceding to a form of uncritiqued deterministic logic which I had used to justify my practice. My decision to engage in a critical research was furthered by my reading of a study by Morag Munro of Maynooth University, in which she described educational technology policy as a 'trojan horse for neoliberalism' (Munro, 2016, p.140). At the risk of sounding naïve, I had never really considered that my work with technology might have advanced the neoliberal agendas of others. And so began a conscious decision to engage in a study of the effects of my own work, to take on a responsibility to develop a more politically aware and sociologically grounded account of change (Selwyn and Facer, 2014) and to confront the reality of the effect of my privileged practice. For Selwyn and Facer, this form of endeavour requires the development of a political awareness of technology. This development involves a setting aside of common sense perspectives of technology and deterministic logics, instead seeking out the 'state of the actual', the realities of technology use in an effort to identify who wins and who loses though the implementation of technology, and what opportunities exist for the development of more equitable futures (Selwyn and Facer, 2014).

And so, inspired by this guidance, I find myself at this ending point, humbled by the contributions of my colleagues who have highlighted technology as a deeply contested space of unequal power relations, a site of struggle between academics, students, and higher education management. This struggle is set against a backdrop of differing value systems and conceptions of education which come to the fore in the negotiations and struggles over how technology is used in higher education. Academic attempts at the agential selection and use of technologies are set against pressures arising from student expectations and management enthusiasm for the incorporation of technology into teaching. The influential organisational culture which frames technology as a logic of practice is politically influenced by macro level policies and discourses which shape internal narratives of enhancement, modernisation, and progress. I have no doubt played my own role in the establishment of these logics which have taken on the form of orthodoxy to the extent that critical questions or stances are seen as counter logical and deliberately obstructive of inevitable progress. In the absence of an identifiable locus of control over technology, the social shaping of technology becomes a competitive arena with 'winners' attaining the acknowledged benefits of recognition and career progression. And while there is little doubt that technology brings benefits to students and academics, there are also downsides, evidence that some academics lose out in the game of technology adoption. I was surprised at how challenging technology was to the core identity of my colleagues and their sense of place. I found myself deeply affected by accounts of emotional distress, disconnect, and disembodiment. Julia's account of her sense of separation from her faculty, of her increased workload, of clashes with students, and her sense of loneliness, was extremely challenging for me to hear and process. What was my role in the suffering of Julia and my other colleagues? Was I, like other educational technologists, too focused on the affordance of technology and narratives of progress and change, ignoring the effects which impact on the wellbeing and place of academics? Higher education is not noted for its attention to love and care (Grummell, 2017) and I would contend that technology has in this case continued to obscure the emotional labour of teaching practice as well as the emotional and affective consequences of technology use.

Finally, this engagement in critical study has not drawn me to cynicism or outright scepticism with regard to the role of technology in education. I remain an ardent technologist, a fanboy, a gearhead, a self-labelled geek. I love my gadgets and tech. Technology still excites me, and I do hope that it plays a constructive role in the betterment of higher education. Arising from this study, I hope to play some role in the development of egalitarian spaces of dialogue where academics, students, and management, can collaboratively create educational futures through informed decisions on technology for the benefit of all. And while this study has not brought me to a position of cynicism, I do believe it has made me a better educator. I have no doubt that it has brought me to place whereby in the first instance, I now view all technology through a critical lens. This change became apparent to me when a colleague 'Zoom called' me in December 2019 to ask about my participation in an interesting workshop entitled 'Technology Enhanced Assessment'. Before I even knew what I was saying I was guided by the sentiment of Kirkwood and Price (2014) in responding "nice idea.....but what is enhanced and how do we know it!?". Cue a long and awkward silence.

9.5. Limitations of the study

Qualitative research has a number of inherent limitations (Patton, 2002) and there are several limitations within this body of work which are worthy of discussion. The first limitation is related to the scope of the object of study. Data was gathered from fifteen participants representative of the various disciplines and academic demographics at the site of study. This deliberately small sample size enabled an in-depth naturalistic enquiry into lived experiences of this selection of academics. While the sampling technique hoped to locate a variety of participants with various dispositions towards educational technology, it did not successfully identify academics who have thus far rejected the use of technology in practice. While it would seem that these individuals represent a small percentage of the total academic population at the site of study, the research would have been further enriched through their participation. Due to the absence of this demographic, no specific claims to their dispositions, habitus and critical stances are put forward.

A second limitation of the study relates to the absence of management perspectives into academic use of technology in higher education. The scope and the object of study was deliberately limited to the experiences of non-management grade academics. The data highlights the role played by management in influencing the organizational culture and academic usage of technology. The study has also highlighted technology as a site of tension and conflict between the differing ideologies and philosophies of management and academics. There exists a dearth of studies which apply a sociological lens to the consideration of higher education management perspectives of educational technology. Such studies may offer valuable insights into management viewpoints on imperatives for the use of technology, sites of struggle, organizational cultures, and perspectives on the academic use of technology.

A third limitation of the study is linked to the generalisability of the study's findings. This case study which was carried out at a single Irish higher education institute, has produced data which is highly contextual to the site of study. While generalisation was not the intended purpose of the study, it is unlikely that the issues unearthed in these findings are unique to the context. It is hoped that the findings of this research will be relevant to others working in higher education and that this work may encourage similar studies, resulting in a deeper understanding of academic technology adoption and use, leading to generalisations and further theory building.

9.6. Suggested areas of future work

During the course of this research, it because evident that a number of potential further lines of enquiry would be of benefit to those working in the fields of educational technology and academic development. As previously discussed, an increased understanding of management perspectives into technology would have been useful in the contextualising and interpretation of the findings. The emerging topic of e-leadership in educational technology (see Arnold and Sangrà, 2018) is furthering our understanding of the important role that management perspectives and cultures play in the use of technology in educational settings. While the national forum has disseminated some valuable insights into management perspectives (National Forum, 2015), this work is somewhat separated from the messy realities of technology adoption within academic disciplines. I again return to the words of Schön:

> *In the varied topography of professional practice, there is a high, hard ground overlooking a swamp. On the high ground, manageable problems lend themselves to solution through the use of research-based theory and technique. In the swampy lowlands, problems are messy and confusing and incapable of technical solution.*
>
> (Schön, 1995)

I would contend that all too often we adopt the high ground, examining issues of educational technology along the well-worn lines of strategy, policy, mission and future vision, without descending into Schön's messy 'lowlands', the actuality of technology as a site of struggle, of politics, of conflict, and of conflicting ideologies. Greater understanding of management perspectives on technology may facilitate the creation of critical discursive spaces between management and academics for the purposes of the co-operative utilisation of technology in academia.

A second opportunity for future work lies within the possibilities for the expansion of the theoretical approach taken to this study. Those studying educational technology are well served by accepted theoretical frameworks such as TPACK (Mishra and Koehler, 2006) and TAM (Davis, 1989). As previously discussed, these frameworks offer focused perspectives on the adoption and use of technology but are somewhat ill suited to a broader sociological study of technology practice. My attempt to apply a sociological lens to this study has benefitted from a rewarding but challenging engagement with the works of Pierre Bourdieu. I would acknowledge my own limitations and struggles in my novice endeavours to leverage his theories through the interpretation of writings which have been described as 'complex and intimidatory' (Jenkins, 2014b, pp.9–10). Indeed, it may be that the lack of utilisation of the applicable ideas of traditional theorists such as Bourdieu, Foucault, and Gramsci, can be explained by the contrasting accessibility and ease of use of models such as TPACK and TAM. While technology is not a new subject of focus for the field of sociology, the intersection of sociology and contemporary technology is aided by the emergence of the field of digital sociology (Selwyn, 2019b). Perhaps the continued emergence of this field will prompt efforts to develop new theoretical models which will offer increased ease of applicability and understanding of the academic use of technology.

A final opportunity for future work lies in the study of the emotional impacts of educational technology. As reported in the findings, the integration of technology into practice constitutes a form of emotional work (Bennett, 2014). As an academic and learning technologist who has worked alongside academics for over a decade, I was humbled and somewhat surprised at the accounts of emotions, both positive and negative, which were experienced by these participants. The field of educational technology research has been somewhat negligent in the lack of attention paid to the emotional effects of technology on educators (Castañeda and Selwyn, 2018). Greater attention to this phenomenon would surely be of benefit to learning technologists and those management charged with the responsibility of assisting academics to integrate technology into their practice.

9.7. One more thing…

It would be remiss of me not to alert the reader to the fact that much of the write up of this thesis took place during 2020, the year the covid-19 pandemic reached Ireland. On the evening of Wednesday 11th of March 2020, the Irish state announced that all higher education campuses were to close with immediate effect. The pandemic was a worrying time for all citizens of the state and the societal lockdown brought further fear and uncertainty for staff and students in higher education. The following week, I watched on in admiration and fascination as almost 140 academics and 3000+ students from my institution recommenced classes online using a rapidly assembled 'flotilla' of technologies. From kitchen tables, bedrooms, 'good rooms' and whatever spaces they could find, staff and students did their utmost to keep higher education going. A semblance of some normality. It was inspiring, far from perfect, but it worked for many (but not all). Classes and meetings were interrupted by wi-fi failures, children, family pets, postmen, and the occasional TV newsflash featuring speeches by government leaders. It made many of us realise how much we missed and valued being in the same space as each other.

Interestingly, many of the effects experienced by the participants of this study were suddenly voiced by the wider academy. Colleagues spoke of exhausting working hours, of a disconnection from their students and a sense of disembodiment in online spaces. Concerns were raised around individuals ability to select and use technologies of their choice while unions and management struggled in industrial relations fora over agreements on precedents and new work practices. Academic practices were exteriorised, and concerns raised about control over recordings and learning materials. Colleagues spoke in staff meetings about feeling emotional, angry, embarrassed and stupid, at differing points of their technology transition. Unlike previously, all of the academy now had a shared experience of teaching through technology and began to quickly open discursive spaces to share frustrations, concerns, knowledge and best practice. These discursive spaces have extended to wider academia which has shown a keen interest in sharing knowledge on a range of issues linked to educational technology use during the pandemic. Valuable contributions have been made to our understanding of the experiences of online teaching during the pandemic (see VanLeeuwen et al., 2021; Jandrić et al., 2020; Nguyen, 2020; Fox et al., 2021; Meishar-Tal and Levenberg, 2021), pandemic pedagogies (see Rapanta et al., 2020; Oyedotun, 2020; Anderson, 2020; Pandya et al., 2021), speculations on the post-pandemic university (see Deshmukh, 2021; Eringfeld, 2021; Ladson-Billings, 2021), and critical perspectives on the uses of technology in a time of crisis (Williamson and Hogan, 2021; Selwyn et al., 2021; Williamson, 2021b; Watermeyer et al., 2021).

While we may be inspired by the efforts of our colleagues and the resolve of our students, I would argue that we should show greater concern at the frightening pace at which technology vendors and political interests have sought to colonise decision making at a time of crisis and opportunity. Williamson (2021b, p.15) advises that we pay heed to the 'exploitation of the pandemic as a laboratory for reimagining education'. It is notable that companies such as Zoom, Microsoft, Google, and Adobe have gained tens of millions of new educational users during the course of this crisis. The initial corporate offers of free licenses and trials which were portrayed as corporate concern for a struggling education sector have been quickly replaced by lucrative subscriptions and income streams. How we teach during this pandemic is suddenly shaped by commercial and political interests which are unlikely to make a sudden retreat from our campuses at the conclusion of this pandemic. Not only do these commercial interests influence how we teach, but in at least one worrying instance, they dictate *what* can be taught and discussed on their technologies. In October 2020 for example, Zoom shut down an NYU online seminar which was ironically planning to discuss the topic of the censorship and criminalization of academic political speech[18]. It may be that educational technology will shortly be exposed as a site of social struggle on a much grander scale. There will no doubt be winners and losers from these developments. We can only hope that academics use their voice and experiences to critically shape the future role of technology in our higher education institutes.

As I long for the comfort of a packed lecture hall, perhaps it's only fair to give one of my participants the final say:

> *.... but my colleagues sometimes deliver content online because they don't have a choice and sometimes they get a sense that they're speaking to the abyss. That they're talking through slides in that way and they have no real*

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[18] https://academeblog.org/2020/10/23/statement-from-the-nyu-aaup-on-zoom-censorship-today/

idea if there's anyone with them. And they might ask the odd question and so on and, and manage the online classroom and obviously you do that in a slightly different way, but that there's a kind of a sense of...if the online lecture falls in the woods, ...like if no one is actually there or engaged or if they're all making tea, does that actually land, does the point land at all?

(Dorothy)

References

Ajibade, P. (2018). Technology acceptance model limitations and criticisms: Exploring the practical applications and use in technology-related studies, mixed-method, and qualitative researches. *Library Philosophy & Practice*, 2018.

Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), pp.179–211.

Allen, K. (2007). *The corporate takeover of Ireland*. Irish Academic Press.

Allen-Brown, V. and Nichols, R. (2004). Critical theory and educational technology. *Handbook of research on educational communications and technology*, 2004, pp.1–29.

Allmer, T. (2018). Theorising and analysing academic labour. *tripleC: Communication, Capitalism and Critique*, 16(1), pp.49–77.

Allsopp, M.M., Hohlfeld, T. and Kemker, K. (2007). The Technology Integration Matrix: The development and field-test of an Internet based multi-media assessment tool for the implementation of instructional technology in the classroom. *Florida Educational Research Association, Tampa*, 2007.

Al-Senaidi, S., Lin, L. and Poirot, J. (2009). Barriers to adopting technology for teaching and learning in Oman. *Computers & Education*, 53(3), pp.575–590.

Altheide, D., Coyle, M., DeVriese, K. and Schneider, C. (2008). Emergent qualitative document analysis. *Handbook of emergent methods*, 2008, pp.127–151.

Alvesson, M. and Deetz, S. (2020). *Doing critical research*. SAGE Publications Limited.

Anderson, G.L. and Jones, F. (2000). Knowledge Generation in Educational Administration from the Inside Out: The Promise and Perils of Site-Based, Administrator Research. *Educational Administration Quarterly*, 36(3), pp.428–464.

Anderson, V. (2020). A digital pedagogy pivot: re-thinking higher education practice from an HRD perspective. *Human Resource Development International*, 23(4), pp.452–467.

Angeli, C. and Valanides, N. (2009). Epistemological and methodological issues for the conceptualization, development, and assessment of ICT–TPCK: Advances in technological pedagogical content knowledge (TPCK). *Computers & Education*, 52(1), pp.154–168.

Antonenko, P.D. (2015). The instrumental value of conceptual frameworks in educational technology research. *Educational Technology Research and Development*, 63(1), pp.53–71.

Apple, M.W. (2001). Comparing neo-liberal projects and inequality in education. *Comparative Education*, 37(4), pp.409–423.

Apps, T., Beckman, K. and Bennett, S. (2019). Engaging with Bourdieu's theory of practice: an empirical tool for exploring school students' technology practice. *Technology, pedagogy and education*, 28(4), pp.413–423.

Archer, L. (2008). The new neoliberal subjects? Younger academics' constructions of professional identity. *Journal of Education Policy*, 23(3), pp.265–285.

Arkorful, V. and Abaidoo, N. (2015). The role of e-learning, advantages and disadvantages of its adoption in higher education. *International Journal of Instructional Technology and Distance Learning*, 12(1), pp.29–42.

Arnold, D. and Sangrà, A. (2018). Dawn or dusk of the 5th age of research in educational technology? A literature review on (e-)leadership for technology-enhanced learning in higher education (2013-2017). *International Journal of Educational Technology in Higher Education*, 15(1), pp.1–29.

Asselin, M.E. (2003). Insider research: issues to consider when doing qualitative research in your own setting. *Journal for nurses in staff development : JNSD : official journal of the National Nursing Staff Development Organization*, 19(2), pp.99–103.

Atkinson, D. and Lim, S.L. (2013). Improving assessment processes in Higher Education: Student and teacher perceptions of the effectiveness of a rubric embedded in a LMS. *Australasian Journal of Educational Technology*, 29(5).

Atkinson, W. (2019). Time for Bourdieu: Insights and oversights. *Time & Society*, 28(3), pp.951–970.

Austin, R. and Hunter, B. (2013). ICT Policy and Implementation in Education: cases in Canada, Northern Ireland and Ireland. *European Journal of Education*, 48(1), pp.178–192.

Ayyagari, R., Grover, V. and Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS quarterly*, 2011, pp.831–858.

Bagozzi, R.P. (2007). The legacy of the technology acceptance model and a proposal for a paradigm shift. *Journal of the association for information systems*, 8(4), pp.244–254.

Bain, J.D. and McNaught, C. (2006). How academics use technology in teaching and learning: understanding the relationship between beliefs and practice. *Journal of Computer Assisted Learning*, 22(2), pp.99–113.

Baker, S.E., Edwards, R. and Doidge, M. (2012). How many qualitative interviews is enough?: Expert voices and early career reflections on sampling and cases in qualitative research. , 2012. Available from: http://eprints.ncrm.ac.uk/2273/.

Ball, S.J. (2003). The teacher's soul and the terrors of performativity. *Journal of Education Policy*, 18(2), pp.215–228.

Ball, S.J. (2012). Performativity, Commodification and Commitment: An I-Spy Guide to the Neoliberal University. *British Journal of Educational Studies*, 60(1), pp.17–28.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), pp.191–215.

Bassey, M. (1999). *Case study research in educational settings*. McGraw-Hill Education (UK).

Baxter, P. and Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *Qualitative Report*, 13(4), pp.544–559.

Baydas, O., Kucuk, S., Yilmaz, R.M., Aydemir, M. and Goktas, Y. (2015). Educational technology research trends from 2002 to 2014. *Scientometrics*, 105(1), pp.709–725.

Bayne, S. (2015). What's the Matter with 'Technology-Enhanced Learning'? *Learning, Media and Technology*, 40(1), pp.5–20.

Bayne, S., Evans, P., Ewins, R., Knox, J. and Lamb, J. (2020). *The Manifesto for Teaching Online*. MIT Press.

Bazeley, P. and Jackson, K. (2013). *Qualitative data analysis with NVivo*. Sage Publications Limited.

Beckman, K., Apps, T., Bennett, S. and Lockyer, L. (2018). Conceptualising technology practice in education using Bourdieu's sociology. *Learning, Media and Technology*, 43(2), pp.197–210.

Becnel, K. (2019). *Emerging technologies in virtual learning environments*. IGI Globe.

Belland, B.R. (2009). Using the theory of habitus to move beyond the study of barriers to technology integration. *Computers & Education*, 52(2), pp.353–364.

Bellas, M.L. (1999). Emotional labor in academia: The case of professors. *The Annals of the American Academy of Political and Social Science*, 561(1), pp.96–110.

Bennett, L. (2014). Putting in more: emotional work in adopting online tools in teaching and learning practices. *Teaching in Higher Education*, 19(8), pp.919–930.

Bennett, S., Dawson, P., Bearman, M., Molloy, E. and Boud, D. (2017). How technology shapes assessment design: Findings from a study of university teachers. *British Journal of Educational Technology*, 48(2), pp.672–682.

Bennett, S. and Maton, K. (2010). Beyond the 'digital natives' debate: Towards a more nuanced understanding of students' technology experiences. *Journal of Computer Assisted Learning*, 26(5), pp.321–331.

Bennett, S. and Oliver, M. (2011). Talking back to theory: the missed opportunities in learning technology research. *Research in Learning Technology*, 19(3).

Benson, S.N. and Ward, C.L. (2013). Teaching with technology: Using TPACK to understand teaching expertise in online higher education. *Journal of Educational Computing Research*, 48(2), pp.153–172.

Berger, R. (2015). Now I see it, now I don't: researcher's position and reflexivity in qualitative research. *Qualitative Research*, 15(2), pp.219–234.

Berry, K. and Cassidy, S. (2013). Emotional labour in university lecturers: Considerations for higher education institutions. *Journal of Curriculum and Teaching*, 2(2).

Bezuidenhout, A. (2015). Implications for academic workload of the changing role of distance educators. *Distance education*, 36(2), pp.246–262.

Bienkowski, M., Feng, M. and Means, B. (2012). Enhancing Teaching and Learning through Educational Data Mining and Learning Analytics: An Issue Brief. *Office of Educational Technology, US Department of Education*, 2012.

Biesta, G. (2004). Against learning. Reclaiming a language for education in an age of learning. *Nordic Studies in Education= Nordisk Pedagogik*, 23, pp.70–82.

Biesta, G. (2007). Bridging the gap between educational research and educational practice: The need for critical distance. *Educational research and evaluation*, 13(3), pp.295–301.

Bijker, W.E., Hughes, T.P. and Pinch, T.J. (1987). The Social construction of technological systems: new directions in the sociology and history of technology. In: M.I.T. Press.

Billot, J. (2010). The imagined and the real: identifying the tensions for academic identity. *Higher Education Research & Development*, 29(6), pp.709–721.

Blin, F. and Munro, M. (2008). Why hasn't technology disrupted academics' teaching practices? Understanding resistance to change through the lens of activity theory. *Computers and Education*, 50(2), pp.475–490.

Bogdan, R. and Biklen, S.K. (1982). *Qualitative research for education: an introduction to theory and methods*. 2nd ed. Allyn and Bacon.

Bolliger, D.U. and Wasilik, O. (2009). Factors influencing faculty satisfaction with online teaching and learning in higher education. *Distance education*, 30(1), pp.103–116.

Bond, M., Zawacki-Richter, O. and Nichols, M. (2019). Revisiting five decades of educational technology research: A content and authorship analysis of the British Journal of Educational Technology. *British Journal of Educational Technology*, 50(1), pp.12–63.

Borgman, C.L. (2007). *Scholarship in the digital age: Information, infrastructure, and the Internet*. MIT Press.

Boud, D. (1999). Situating academic development in professional work: Using peer learning. *The International Journal for Academic Development*, 4(1), pp.3–10.

Boud, D. and Middleton, H. (2003). Learning from others at work: communities of practice and informal learning. *Journal of workplace learning*, 15(5), pp.194–202.

Bourdieu, P. (1977). *Outline of a theory of practice*. Cambridge University Press.

Bourdieu, P. (1984). *Distinction: a social critique of the judgement of taste*. 1st ed. Harvard University Press.

Bourdieu, P. (1988). *Homo academicus*. Stanford University Press.

Bourdieu, P. (1990a). *The logic of practice*. Polity Press.

Bourdieu, P. (1990b). *In other words: essays towards a reflexive sociology*. Polity Press.

Bourdieu, P. (1998). *Practical reason: on the theory of action*. Polity Press.

Bourdieu, P. (2005). *The social structures of the economy*. Polity Press.

Bourdieu, P. and Ferguson, P.P. (1999). *The weight of the world: social suffering in contemporary society*. Polity Press.

Bourdieu, P. and Wacquant, L.J.D. (1992). *An invitation to reflexive sociology*. Polity Press.

Bowen, G.A. (2009). Document Analysis as a Qualitative Research Method. *Qualitative research journal*, 9(2), pp.27–40.

Bower, M. and Sturman, D. (2015). What are the educational affordances of wearable technologies?. *Computers & Education*, 88, pp.343–353.

Boyatzis, R.E. (1998). *Transforming qualitative information: Thematic analysis and code development*. SAGE Publications.

Boyer, E.L. (1990). *Scholarship Reconsidered: Priorities of the Professoriate*. Princeton University Press.

Bozkurt, A., Jung, I., Xiao, J., Vladimirschi, V., Schuwer, R., Egorov, G., Lambert, S., Al-Freih, M., Pete, J. and Olcott Jr, D. (2020). A global outlook to the interruption of education due to COVID-19 pandemic: Navigating in a time of uncertainty and crisis. *Asian Journal of Distance Education*, 15(1), pp.1–126.

Braun, V. and Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), pp.77–101.

Brooke, C. (2002). What does it mean to be 'critical' in IS research? *Journal of Information Technology*, 17(2), pp.49–57.

Brooks, C.F. (2010). Toward 'hybridised' faculty development for the twenty-first century: blending online communities of practice and face-to-face meetings in instructional and professional support programmes. *Innovations in Education and Teaching International*, 47(3), pp.261–270.

Brown, C. and Czerniewicz, L. (2010). Debunking the 'digital native': beyond digital apartheid, towards digital democracy. *Journal of computer assisted learning*, 26(5), pp.357–369.

Brown, R. and Carasso, H. (2013). *Everything for sale? The marketisation of UK higher education*. Routledge.

Brown, S. (2013). Large-scale innovation and change in UK higher education. *Research in Learning Technology*, 21(2), pp.1–13.

Bryman, A. (1984). The debate about quantitative and qualitative research: a question of method or epistemology?. *British journal of Sociology*, 1984, pp.75–92.

Bryman, A. (2012). *Social research methods*. 4th ed. Oxford university press.

Bryson, M. and De Castell, S. (1998). New technologies and the cultural ecology of primary schooling: Imagining teachers as luddites in/deed. *Educational Policy*, 12(5), pp.542–567.

Buchanan, T., Sainter, P. and Saunders, G. (2013). Factors affecting faculty use of learning technologies: implications for models of technology adoption. *Journal of Computing in Higher Education*, 25(1), pp.1–11.

Burke, P.J. and Jackson, S. (2007). *Reconceptualising lifelong learning: feminist interventions*. Routledge.

Burns, M. (2013). Success, failure or no significant difference: Charting a course for successful educational technology integration. *International Journal of Emerging Technologies in Learning*, 8(1), pp.38–45.

Callahan, J.L. and Sandlin, J.A. (2007). The Tyranny of Technology: A Critical Assessment of the Social Arena of Online Learning. *New Horizons in Adult Education and Human Resource Development*, 21(3-4), pp.5–15.

Callender, C. (2008). The impact of term-time employment on higher education students' academic attainment and achievement. *Journal of education policy*, 23(4), pp.359–377.

Callon, M. (1987). Society in the making: the study of technology as a tool for sociological analysis. *The social construction of technological systems: New directions in the sociology and history of technology*, 1987, pp.83–103.

Calvo, R.A. and D'Mello, S.K. (2011). *New perspectives on affect and learning technologies*. Springer Science & Business Media.

Carpenter, C.R., Cone, D.C., Sarli, C.C. and Gaddis, G.M. (2014). Using Publication Metrics to Highlight Academic Productivity and Research Impact. *Academic Emergency Medicine*, 21(10), pp.1160–1172.

Carroll, L. (1992). *Alice in wonderland*. Wordsworth editions.

Castañeda, L. and Selwyn, N. (2018). More than tools? Making sense of the ongoing digitizations of higher education. *International Journal of Educational Technology in Higher Education*, 15(1), pp.1–10.

Chai, C.S., Ling Koh, J.H., Tsai, C.-C. and Lee Wee Tan, L. (2011). Modeling primary school pre-service teachers' Technological Pedagogical Content Knowledge (TPACK) for meaningful learning with information and communication technology (ICT). *Computers & Education*, 57(1), pp.1184–1193.

Chandler, D. (1995). Technological or Media Determinism. *Aberystwyth University*, 1995.

Chapman, B. (2013). *Large Scale, Blended Learning Development: Benchmark*. Chapman Alliance LLC. Available from: http://www.chapmanalliance.com/blendedlearningstudy/.

Chen, C.-Y., Shih, B.-Y. and Yu, S.-H. (2012). Disaster prevention and reduction for exploring teachers' technology acceptance using a virtual reality system and partial least squares techniques. *Natural Hazards*, 62(3), pp.1217–1231.

Cherner, T. and Curry, K. (2017). Enhancement or Transformation? A Case Study of Preservice Teachers' Use of Instructional Technology. *Contemporary issues in technology and teacher education*, 17(2), pp.268–290.

Cheung, R. and Vogel, D. (2013). Predicting user acceptance of collaborative technologies: An extension of the technology acceptance model for e-learning. *Computers & Education*, 63(Journal Article), pp.160–175.

Chomsky, N. (1999). *Profit over people: Neoliberalism and global order*. Seven Stories Press.

Chow, A.S. (2013). One Educational Technology Colleague's Journey from Dotcom Leadership to University E-Learning Systems Leadership: Merging Design Principles, Systemic Change and Leadership Thinking. *TechTrends*, 57(5), pp.64–73.

Chuttur, M.Y. (2009). Overview of the technology acceptance model: Origins, developments and future directions. *Working Papers on Information Systems*, 9(37), pp.9–37.

Clarke, M., Drennan, J., Harmon, D., Hyde, A. and Politis, Y. (2015). *The academic profession in Ireland*. University College Dublin.

Clarke, M., Kenny, A. and Loxley, A. (2015). Creating a supportive working environment for academics in higher education: country report Ireland. *M. Clarke, A. Kenny and A. Loxley, Creating a Supportive Working Environment for Academics in Higher Education: Country Report Ireland, Irish Federation of University Teachers and Teachers' Union of Ireland*, 2015.

Clegg, S. (2005). Theorising the mundane: The significance of agency. *International studies in sociology of education*, 15(2), pp.149–164.

Clegg, S. (2008). Academic identities under threat?. *British Educational Research Journal*, 34(3), pp.329–345.

Clegg, S. (2009). Forms of knowing and academic development practice. *Studies in Higher Education*, 34(4), pp.403–416.

Clegg, S. (2011). Academic identities re-formed? Contesting technological determinism in accounts of the digital age. *Contemporary Social Science*, 6(2), pp.175–189.

Clegg, S., Hudson, A. and Steel, J. (2003). The Emperor's New Clothes: Globalisation and e-learning in Higher Education. *British Journal of Sociology of Education*, 24(1), pp.39–53.

Cleveland-Innes, M. and Campbell, P. (2012). Emotional presence, learning, and the online learning environment. *The International Review of Research in Open and Distributed Learning*, 13(4), pp.269–292.

Coffield, F., Edward, S., Finlay, I., Hodgson, A., Spours, K., Steer, R. and Gregson, M. (2007). How Policy Impacts on Practice and How Practice Does Not Impact on Policy. *British educational research journal*, 33(5), pp.723–741.

Coghlan, D. and Brannick, T. (2005). *Doing action research in your own organization*. 2nd ed. Sage Publications.

Collins, C.S. and Stockton, C.M. (2018). The Central Role of Theory in Qualitative Research. *International Journal of Qualitative Methods*, 17(1), pp.1–10.

Conole, G. (2002). The evolving landscape of learning technology. *ALT-J*, 10(3), pp.4–18.

Conole, G. (2010). Bridging the gap between policy and practice: A framework for technological intervention. *Journal of E-Learning and Knowledge Society*, 6(1), pp.13–27.

Conole, G. and Dyke, M. (2004). What are the affordances of information and communication technologies?. *Association for Learning Technology Journal*, 12(2), pp.113–124.

Cook, J., Holley, D. and Andrew, D. (2007). A stakeholder approach to implementing e-learning in a university. *British Journal of Educational Technology*, 38(5), pp.784–794.

Costa, C. (2013). The habitus of digital scholars. *Research in Learning Technology*, 21, pp.1–17.

Costa, C. (2015a). Outcasts on the inside: academics reinventing themselves online. *International Journal of Lifelong Education*, 34(2), pp.194–210.

Costa, C. (2015b). Academics Online: Fighting for a New Habitus. In: *Bourdieu, Habitus and Social Research: The Art of Application*. Palgrave Macmillan.

Courtois, A. and O'Keefe, T. (2015). Precarity in the ivory cage: Neoliberalism and casualisation of work in the Irish higher education sector. *Journal for Critical Education Policy Studies*, 13(1), pp.43–66.

Cox, M.J. (2013). Formal to informal learning with IT: research challenges and issues for e-learning. *Journal of Computer Assisted Learning*, 29(1), pp.85–105.

Cox, M.J. and Marshall, G. (2007). Effects of ICT: Do we know what we should know?. *Education and Information Technologies*, 12(2), pp.59–70.

Creswell, J.W. (2007). *Qualitative inquiry & research design: choosing among five approaches*. 2nd ed. Sage Publications.

Creswell, J.W. (2009). *Research design: qualitative, quantitative, and mixed methods approaches*. 3rd ed. Sage Publications.

Crotty, M. (1998). *The foundations of social research: meaning and perspective in the research process*. Sage Publications.

Cubeles, A. and Riu, D. (2018). The effective integration of ICTs in universities: the role of knowledge and academic experience of professors. *Technology, Pedagogy and Education*, 27(3), pp.339–349.

Currie, J. and Eveline, J. (2010). E-technology and work/life balance for academics with young children. *Higher education*, 62(4), pp.533–550.

Curtis, S., Gesler, W., Smith, G. and Washburn, S. (2000). Approaches to sampling and case selection in qualitative research: Examples in the geography of health. *Social Science and Medicine*, 50(7–8), pp.1001–1014.

Czerniewicz, L. (2008). Distinguishing the Field of Educational Technology. *Electronic Journal of e-Learning*, 6(3), p.171.

Czerniewicz, L. (2010). Educational technology – mapping the terrain with Bernstein as cartographer. *Journal of Computer Assisted Learning*, 26(6), pp.523–534.

Czerniewicz, L., Mogliacci, R., Walji, S., Cliff, A., Swinnerton, B. and Morris, N. (2021). Academics teaching and learning at the nexus: unbundling, marketisation and digitisation in higher education. *Teaching in higher education*, 2021, pp.1–15.

Czerniewicz, L. and Brown, C. (2009). A study of the relationship between institutional policy, organisational culture and e-learning use in four South African universities. *Computers and education*, 53(1), pp.121–131.

Czerniewicz, L. and Rother, K. (2018). Institutional educational technology policy and strategy documents: An inequality gaze. *Research in Comparative and International Education*, 13(1), pp.27–45.

Dalgarno, B. and Lee, M.J.W. (2010). What are the learning affordances of 3-D virtual environments?. *British Journal of Educational Technology*, 41(1), pp.10–32.

Darby, F., McSweeney, D. and O'Reilly, K. (2017). The Dominant Educational Discourses Underlying the Cassells Report. *DBS Business Review*, 1, pp.122–129.

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 1989, pp.319–340.

Dawson, C. (2019). *A–Z of Digital Research Methods*. 1st ed. Routledge.

De Laat, M. and Prinsen, F.R. (2014). Social learning analytics: Navigating the changing settings of higher education. *Research & Practice in Assessment*, 9, pp.51–60.

De Laine, M. (2000). *Fieldwork, participation and practice: Ethics and dilemmas in qualitative research*. Sage.

Decuypere, M., Grimaldi, E. and Landri, P. (2021). Introduction: Critical studies of digital education platforms. , 2021.

Deem, R. (2001). Globalisation, new managerialism, academic capitalism and entrepreneurialism in universities: Is the local dimension still important?. *Comparative Education*, 37(1), pp.7–20.

Deem, R., Hillyard, S., Reed, Michael and Reed, Mike. (2007). *Knowledge, higher education, and the new managerialism: The changing management of UK universities*. Oxford University Press.

Deem, R. and Brehony, K.J. (2005). Management as ideology: the case of 'new managerialism' in higher education. *Oxford Review of Education*, 31(2), pp.217–235.

Deer, C. (2014). Doxa. In: *Pierre Bourdieu*. Routledge, pp.126–137.

Delello, J.A. and McWhorter, R.R. (2020). *Disruptive and emerging technology trends across education and the workplace*. IGI Global.

Denscombe, M. (2010). *The good research guide: for small-scale social research projects*. 4th ed. McGraw-Hill Education (UK).

Denzin, N.K. (1978). *The research act: A theoretical introduction to sociological methods*. McGraw-Hill.

Department for Education and Skills (United Kingdom). (2003). *Towards a Unified e-Learning Strategy (Consultation Document)* [online]. DfES Publications. Available from: https://www.alt.ac.uk/sites/default/files/assets_editor_uploads/documents/e-Learning_Strategy.pdf [accessed 1 January 2019].

Department of Education and Skills. (2011). *National strategy for higher education to 2030*. Department of Education and Skills Dublin.

Department of Education and Skills. (2016). *Investing in national ambition: A strategy for funding higher education. Report of the expert group on future* *funding for higher education*. Department of Education and Skills. Available from: https://www.education.ie/en/Publications/Policy-Reports/Investing-in-National-Ambition-AStrategy- for-Funding-Higher-Education.pdf.

Deshmukh, J. (2021). Speculations on the post-pandemic university campus–a global inquiry. *Archnet-IJAR: International Journal of Architectural Research*, 2021.

Devitt, A. and Brady, M. (2018). *Staff Use of Technology-Enhanced Assessment in Higher Education*. Available from: http://www.tara.tcd.ie/bitstream/handle/2262/85040/Technology%20Enhanced%20Assessment%20TCD%20Oct%202018.pdf?sequence=1.

Dewey, J. (1904). The relation of theory to practice in education. , 1904.

DiCicco-Bloom, B. and Crabtree, B.F. (2006). The qualitative research interview. *Medical education*, 40(4), pp.314–321.

van Dijk, D., Manor, O. and Carey, L.B. (2014). Publication metrics and success on the academic job market. *Current Biology*, 24(11), pp.R516–R517.

Donnelly, R. and O'Rourke, K.C. (2007). What now? Evaluating eLearning CPD practice in Irish third-level education. *Journal of Further and Higher Education*, 31(1), pp.31–40.

Drachsler, H., Verbert, K., Santos, O.C. and Manouselis, N. (2015). *Panorama of Recommender Systems to Support Learning*.

Dreyfus, H.L. (2013). *On the internet*. Routledge.

Drumm, L. (2019). Folk pedagogies and pseudo-theories: how lecturers rationalise their digital teaching. *Research in learning technology*, 27, pp.1–17.

Drumm, L.F. (2017). *The role of theory in teaching with digital technologies in universities* [unpublished]. Glasgow Caledonian University.

Dublin City University. (2017). *Strategic Plan 2017-2022 | DCU* [online]. Dublin City University. Available from: https://www.dcu.ie/external-affairs/strategic-plan.shtml [accessed 15 November 2018].

Duval, E. (2011). Attention please!: learning analytics for visualization and recommendation. In: Learning Analytics and Knowledge. pp.9–17.

Duxbury, L. and Smart, R. (2011). The "myth of separate worlds": An exploration of how mobile technology has redefined work-life balance. In: *Creating balance?*. Springer, pp.269–284.

Eichelberger, A. and Leong, P. (2019). They think I should teach online! The influence of college faculty's beliefs about colleagues and institution on online teaching. *International Journal*, 13(2), pp.17–33.

Eisenhardt, K.M. and Graebner, M.E. (2007). Theory building from cases: Opportunities and challenges. *Academy of management journal*, 50(1), pp.25–32.

Ellis, D. and Tucker, I. (2020). *Emotion in the Digital Age: Technologies, Data and Psychosocial Life*. Routledge.

Ely, D.P. (1990). Conditions that Facilitate the Implementation of Educational Technology Innovations. *Journal of Research on Computing in Education: Educational Software Portability*, 23(2), pp.298–305.

Engeström, Y. (1999). Activity theory and individual and social transformation. *Perspectives on activity theory*, 19(38), pp.19–30.

Englund, C., Englund, C., Olofsson, A.D., Olofsson, A.D., Price, L. and Price, L. (2017). Teaching with technology in higher education: understanding conceptual change and development in practice. *Higher Education Research & Development*, 36(1), pp.73–87.

Eraut, M. (2007). Learning from other people in the workplace. *Oxford review of education*, 33(4), pp.403–422.

Erichsen, E.R. and Salajan, F.D. (2014). A Comparative Analysis of E-Learning Policy Formulation in the European Union and the United States: Discursive Convergence and Divergence. *Comparative Education Review*, 58(1), pp.135–165.

Eringfeld, S. (2021). Higher education and its post-coronial future: utopian hopes and dystopian fears at Cambridge University during Covid-19. *Studies in Higher Education*, 46(1), pp.146–157.

Ertmer, P.A. (1999). Addressing First- and Second-Order Barriers to Change: Strategies for Technology Integration. *Educational Technology Research and Development*, 47(4), pp.47–61.

Ertmer, P.A. (2005). Teacher Pedagogical Beliefs: The Final Frontier in Our Quest for Technology Integration?. *Educational Technology Research and Development*, 53(4), pp.25–39.

Ertmer, P.A. and Ottenbreit-Leftwich, A.T. (2010). Teacher Technology Change: How Knowledge, Confidence, Beliefs, and Culture Intersect. *Journal of Research on Technology in Education*, 42(3), pp.255–284.

European Commission. (2013a). *Analysis and mapping of innovative teaching and learning for all through new technologies and open educational resources in*

Europe. European Commission. Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013SC0341&from=EN.

European Commission. (2013b). *Report to the European Commission on Improving the quality of teaching and learning in Europe's higher education institutions*. Publications Office of the European Union.

European Commission. (2014). *New Modes of Learning and Teaching in Higher Education. Report to the European Commission*. Publications Office of the European Union. Available from: http://ec.europa.eu/dgs/education_culture/repository/education/library/reports/modernisation-universities_en.pdf.

European Commission. (2018). *Communication from the Commission to the European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions on the Digital Education Action Plan*. European Commission. Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2018:22:FIN.

Farrelly, T., Raftery, D., Risquez, A., McAvinia, C., Harding, N., Costello, E., O'Grady, M., Ryan, D., McSweeney, D. and Logan-Phelan, T. (2015). Exploring lecturer engagement with the VLE: initial findings from a multi-college survey. In: *EdTech 2015: Beyond the Horizon: Policy, Practice and Possibilities*. EdTech 2015. Available from: http://eprints.teachingandlearning.ie/2219/.

Farrelly, T., Raftery, D. and Harding, N. (2018). Exploring lecturer engagement with the VLE: findings from a multi-college staff survey. *Irish Journal of Technology Enhanced Learning*, 2018.

Feenberg, A. (1991). *Critical theory of technology*. Oxford University Press Inc.

Feenberg, A. (2002). *Transforming technology: a critical theory revisited*. Rev. Oxford University Press.

Feenberg, A. (2012). *Questioning technology*. Routledge.

Feenberg, A. (2017). The Online Education Controversy and the Future of the University. *Foundations of Science*, 22(2), pp.363–371.

Fenwick, T., Nerland, M. and Jensen, K. (2012). Sociomaterial approaches to conceptualising professional learning and practice. *Journal of Education and Work: Reconceptualising Professional Learning in a Changing Society*, 25(1), pp.1–13.

Fereday, J. and Muir-Cochrane, E. (2006). Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *International Journal of Qualitative Methods*, 5(1), pp.80–92.

Ferguson, R. (2012). Learning analytics: drivers, developments and challenges. *International Journal of Technology Enhanced Learning*, 4(5–6), pp.304–317.

Fernández-Batanero, J.-M., Román-Graván, P., Reyes-Rebollo, M.-M. and Montenegro-Rueda, M. (2021). Impact of educational technology on teacher stress and anxiety: A literature review. *International Journal of Environmental Research and Public Health*, 18(2), p.548.

Fernback, J. (2018). Academic/digital work: ICTs, knowledge capital, and the question of educational quality. *tripleC: Communication, Capitalism & Critique. Open Access Journal for a Global Sustainable Information Society*, 16(1), pp.143–158.

Finelli, C.J., Daly, S.R. and Richardson, K.M. (2014). Bridging the Research-to-Practice Gap: Designing an Institutional Change Plan Using Local Evidence. *Journal of engineering education (Washington, D.C.)*, 103(2), pp.331–361.

Flannery, M. and McGarr, O. (2014). Flexibility in higher education: an Irish perspective. *Irish Educational Studies*, 33(4), pp.419–434.

Fleming, T., Loxley, A., Finnegan, F. and Shevlin, M. (2017). *Access and participation in Irish higher education*. Palgrave Macmillan.

Fletcher, T. and Bullock, S.M. (2015). Reframing pedagogy while teaching about teaching online: a collaborative self-study. *Professional Development in Education*, 41(4), pp.690–706.

Flick, U. (2009). *An introduction to qualitative research*. 4th ed. Sage.

Fox, B., Bearman, M., Bellingham, R., North-Samardzic, A., Scarparo, S., Taylor, D., Thomas, M.K.E. and Volkov, M. (2021). Longing for connection: University educators creating meaning through sharing experiences of teaching online. *British Journal of Educational Technology*, 2021.

Fox, O. and Sumner, N. (2014). Analyzing the Roles, Activities, and Skills of Learning Technologists: A Case Study From City University London. *American Journal of Distance Education*, 28(2), pp.92–102.

Frank, K.A., Zhao, Y. and Borman, K. (2004). Social capital and the diffusion of innovations within organizations: The case of computer technology in schools. *Sociology of education*, 77(2), pp.148–171.

de Freitas, S., Gibson, D., Du Plessis, C., Halloran, P., Williams, E., Ambrose, M., Dunwell, I. and Arnab, S. (2015). Foundations of dynamic learning analytics: Using university student data to increase retention. *British journal of educational technology*, 46(6), pp.1175–1188.

de Freitas, S. and Oliver, M. (2005). Does E-learning Policy Drive Change in Higher Education?: A case study relating models of organisational change to e-learning implementation. *Journal of Higher Education Policy and Management*, 27(1), pp.81–95.

Friesen, N. (2008). Critical Theory: Ideology Critique and the Myths of E-Learning. *Ubiquity*, 2008(June), p.2.

Friesen, N. (2009). *Re-thinking e-learning research: Foundations, methods, and practices*. Peter Lang.

Friesen, N. (2013). Educational technology and the “New language of learning”: Lineage and limitations. In: *The politics of education and technology*. Springer, pp.21–38.

Fry, H., Ketteridge, S. and Marshall, S. (2009). *A handbook for teaching and learning in higher education: enhancing academic practice*. Routledge.

Fullan, M. (2007). *The new meaning of educational change*. Routledge.

Gale, T. and Lingard, B. (2015). Evoking and provoking Bourdieu in educational research. *Cambridge journal of education*, 45(1), pp.1–8.

Gallagher, M. and Knox, J. (2019). Global technologies, local practices. *Learning, media and technology*, 44(3), pp.225–234.

Garrison, D.R. and Vaughan, N.D. (2013). Institutional change and leadership associated with blended learning innovation: Two case studies. *The Internet and Higher Education*, 18, pp.24–28.

Gee, J.P. (2000). Chapter 3: Identity as an analytic lens for research in education. *Review of research in education*, 25(1), pp.99–125.

Geertz, C. (1973). Thick description: Toward an interpretive theory of culture. *Turning points in qualitative research: Tying knots in a handkerchief*, 3, pp.143–168.

Georgina, D.A. and Olson, M.R. (2008). Integration of technology in higher education: A review of faculty self-perceptions. *The Internet and Higher Education*, 11(1), pp.1–8.

Gerring, J. (2004). What is a case study and what is it good for?. *American political science review*, 98(2), pp.341–354.

Gill, R. (2009). Breaking the silence: The hidden injuries of neo-liberal academia. *Secrecy and silence in the research process: Feminist reflections*, 21, p.21.

Gillham, B. (2010). *Case Study Research Methods*. Continuum.

Giroux, H.A. (2004). *The terror of neoliberalism*. Paradigm.

Glaser, B.G. and Strauss, A.L. (1967). *The discovery of grounded theory: strategies for qualitative research*. Aldine Pub.

Glover, I., Hepplestone, S., Parkin, H.J., Rodger, H. and Irwin, B. (2016). Pedagogy first: Realising technology enhanced learning by focusing on teaching practice. *British Journal of Educational Technology*, 47(5), pp.993–1002.

Goktas, Y., Kucuk, S., Aydemir, M., Telli, E., Arpacik, O., Yildirim, G. and Reisoglu, I. (2012). Educational Technology Research Trends in Turkey: A Content Analysis of the 2000-2009 Decade. *Educational Sciences: Theory and Practice*, 12(1), pp.177–199.

Goodchild, T. and Speed, E. (2019). Technology enhanced learning as transformative innovation: a note on the enduring myth of TEL. *Teaching in Higher Education*, 24(8), pp.948–963.

Gopaul, B. (2011). Distinction in Doctoral Education: Using Bourdieu's Tools to Assess the Socialization of Doctoral Students. *Equity & excellence in education*, 44(1), pp.10–21.

Gordon, N. and Brayshaw, M. (2014). Technology-Enhanced Learning in Higher Education: Tribes and Territories. In: *E-Learning as a Socio-Cultural System: A Multidimensional Analysis*. IGI Global, pp.224–236.

Gornall, L. (1999). 'New professionals': Change and occupational roles in higher education. *Perspectives: Policy and Practice in Higher Education*, 3(2), pp.44–49.

Gourlay, L. (2012). Cyborg ontologies and the lecturer's voice: a posthuman reading of the 'face-to-face'. *Learning, media and technology*, 37(2), pp.198–211.

Gourlay, L. (2021). There Is No 'Virtual Learning': The Materiality of Digital Education. *Journal of new approaches in educational research*, 10(1), pp.57–66.

Greene, M.J. (2014). On the inside looking in: Methodological insights and challenges in conducting qualitative insider research. *The qualitative report*, 19(29), pp.1–13.

Greenhow, C., Robelia, B. and Hughes, J.E. (2009). Learning, Teaching, and Scholarship in a Digital Age: Web 2.0 and Classroom Research: What Path Should We Take Now?. *Educational Researcher*, 38(4), pp.246–259.

Gregory, M.S.-J. and Lodge, J.M. (2015). Academic workload: the silent barrier to the implementation of technology-enhanced learning strategies in higher education. *Distance Education*, 36(2), pp.210–230.

Grek, S. (2009). Governing by numbers: the PISA 'effect' in Europe. *Journal of Education Policy*, 24(1), pp.23–37.

Grenfell, M. (2012). Interest. In: *Pierre Bourdieu: key concepts*. 2nd ed. Acumen, pp.151–168.

Grenfell, M. (2014). *Pierre Bourdieu: key concepts*. 2nd ed. Acumen.

Grenfell, M. and James, D. (2004). Change in the field-changing the field: Bourdieu and the methodological practice of educational research. *British journal of sociology of education*, 25(4), pp.507–523.

Grix, J. (2010). *The foundations of research*. 2nd ed. Palgrave Macmillan.

Gruber, T. (2014). Academic sell-out: how an obsession with metrics and rankings is damaging academia. *Journal of Marketing for Higher Education*, 24(2), pp.165–177.

Grummell, B. (2017). Love, Care and Solidarity in the Changing Context of Irish Education. *AISHE-J: The All Ireland Journal of Teaching and Learning in Higher Education*, 9(1), pp.3141–31410.

Guba, E.G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Ectj*, 29(2), p.75.

Guba, E.G. and Lincoln, Y.S. (1982). Epistemological and Methodological Bases of Naturalistic Inquiry. *Educational Communication and Technology*, 30(4), pp.233–252.

Guba, E.G. and Lincoln, Y.S. (1994). Competing Paradigms in Qualitative Research. In: *Handbook of Qualitative Research*. pp.105–117.

Guest, G., Bunce, A. and Johnson, L. (2006). How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. *Field Methods*, 18(1), pp.59–82.

Guillemin, M. and Gillam, L. (2004). Ethics, reflexivity, and 'Ethically important moments' in research. *Qualitative Inquiry*, 10(2), pp.261–280.

Gumport, P.J. (2000). Academic Restructuring: Organizational Change and Institutional Imperatives. *Higher Education*, 39(1), pp.67–91.

Gunn, C. and Steel, C. (2012). Linking theory to practice in learning technology research. *Research in Learning Technology*, 20(2), pp.203–216.

Gur, B. and Wiley, D. (2008). Instructional technology and objectification. *Canadian Journal of Learning and Technology/La revue canadienne de l'apprentissage et de la technologie*, 33(3).

Guri-Rozenblit, S. (2009). *Digital technologies in higher education: sweeping expectations and actual effects*. Nova Science Publishers.

Habib, L. and Johannesen, M. (2014). Perspectives on academic staff involvement in the acquisition and implementation of educational technologies. *Teaching in Higher Education*, 19(5), pp.484–496.

Habib, L. and Johannesen, M. (2020). The role of academic management in implementing technology-enhanced learning in higher education. *Technology, Pedagogy and Education*, 29(2), pp.129–146.

Hagenauer, G. and Volet, S. (2014). 'I don't think I could, you know, just teach without any emotion': exploring the nature and origin of university teachers' emotions. *Research Papers in Education*, 29(2), pp.240–262.

Hall, R. (2013). Educational technology and the enclosure of academic labour inside public higher education. *Journal for Critical Education Policy Studies (JCEPS)*, 11(3), pp.52–82.

Hall, R. (2018). On the alienation of academic labour and the possibilities for mass intellectuality. *tripleC: Communication, Capitalism & Critique. Open Access Journal for a Global Sustainable Information Society*, 16(1), pp.97–113.

Hamilton, E.C. and Friesen, N. (2013). Online Education: A Science and Technology Studies Perspective. *Canadian Journal of Learning and Technology*, 39(2).

Hamilton, E.R., Rosenberg, J.M. and Akcaoglu, M. (2016). The Substitution Augmentation Modification Redefinition (SAMR) Model: a Critical Review and Suggestions for its Use. *TechTrends*, 60(5), pp.433–441.

Hammond, M. (2011). Beliefs and ICT: what can we learn from experienced educators?. *Technology, Pedagogy and Education: 20th Anniversary Special Issue: Reviewing the Landscape*, 20(3), pp.289–300.

Hannon, J. (2013). Incommensurate practices: sociomaterial entanglements of learning technology implementation. *Journal of Computer Assisted Learning*, 29(2), pp.168–178.

Hannon, J. and Bretag, T. (2010). Negotiating contested discourses of learning technologies in higher education. *Educational Technology & Society*, 13(1), pp.106–120.

Hanson, J. (2009). Displaced but not replaced: the impact of e-learning on academic identities in higher education. *Teaching in Higher Education*, 14(5), pp.553–564.

Hanson, J. (2013). Educational developers as researchers: the contribution of insider research to enhancing understanding of role, identity and practice. *Innovations in Education and Teaching International*, 50(4), pp.388–398.

Hardy, C. (2014). Hysteresis. In: *Pierre Bourdieu*. Routledge, pp.138–158.

Harkin, S. and Hazelkorn, E. (2015). Institutional mergers in Ireland. In: *Mergers and Alliances in Higher Education*. Springer, Cham, pp.105–121.

Harmon, D. and Erskine, S. (2017). *Eurostudent Survey VI* [online]. Available from: http://eurireland.ie/assets/uploads/2018/02/HEA-Eurostudent-Survey-VI.pdf [accessed 13 July 2020].

Harris, S. (2005). Rethinking academic identities in neo-liberal times. *Teaching in Higher Education: Transformative purposes, values and identities for higher education*, 10(4), pp.421–433.

Harvey, D. (2007). *A brief history of neoliberalism*. Oxford University Press.

Haugsbakk, G. and Nordkvelle, Y. (2007). The rhetoric of ICT and the new language of learning: A critical analysis of the use of ICT in the curricular field. *European Educational Research Journal*, 6(1), pp.1–12.

Hayes, S. (2015). Counting on use of technology to enhance learning. In: *Critical learning in digital networks*. Springer, pp.15–36.

Hazelkorn, E. and Moynihan, A. (2010). Ireland: The challenges of building research in a binary higher education culture. In: *The research mission of higher education institutions outside the university sector*. Springer, pp.175–197.

Heijstra, T.M. and Rafnsdottir, G.L. (2010). The Internet and academics' workload and work–family balance. *The Internet and higher education*, 13(3), pp.158–163.

Heinonen, K., Heinonen, K., Jääskelä, P., Jääskelä, P., Häkkinen, P., Häkkinen, P., Isomäki, H., Isomäki, H., Hämäläinen, R. and Hämäläinen, R. (2019). University Teachers as Developers of Technology-Enhanced Teaching-Do Beliefs Matter?. *Journal of Research on Technology in Education*, 51(2), pp.135–151.

Helsper, E.J. and Eynon, R. (2010). Digital natives: where is the evidence?. *British Educational Research Journal*, 36(3), pp.503–520.

Henkel, M. (2000). *Academic identities and policy change in higher education*. Jessica Kingsley Publishers.

Henkel, M. (2005). Academic Identity and Autonomy in a Changing Policy Environment. *Higher Education*, 49(1/2), pp.155–176.

Hennessy, S., Girvan, C., Mavrikis, M., Price, S. and Winters, N. (2018). Editorial. *British Journal of Educational Technology*, 49(1), pp.3–5.

Henritius, E., Löfström, E. and Hannula, M.S. (2019). University students' emotions in virtual learning: A review of empirical research in the 21st century. *British Journal of Educational Technology*, 50(1), pp.80–100.

Hermans, R., Tondeur, J., van Braak, J. and Valcke, M. (2008). The impact of primary school teachers' educational beliefs on the classroom use of computers. *Computers & Education*, 51(4), pp.1499–1509.

Hew, K.F., Lan, M., Tang, Y., Jia, C. and Lo, C.K. (2019). Where is the "theory" within the field of educational technology research? *British Journal of Educational Technology*, 50(3), pp.956–971.

Higher Education Authority. (2009). *Open and Flexible Learning - HEA Position Paper*. Higher Education Authority. Available from: http://edepositireland.ie/bitstream/handle/2262/80399/hea 2009_flexible_learning_paper.pdf.

Higher Education Authority. (2012). *Part-time and flexible higher education in Ireland – Policy, practice and Recommendations for the Future*. Higher Education Authority. Available from: http://hea.ie/sites/default/files/part_time_report_0.pdf.

Higher Education Authority. (2014). *Review of workload allocation models in Irish Higher Education Institutions*. Higher Education Authority. Available from: https://hea.ie/assets/uploads/2017/06/Review-Of-Workload-Allocation-Models-in-Irish-Higher-Education-Institutions.pdf.

Higher Education Authority. (2018). *Higher Education Authority 2018-2022 Strategic Plan*. Higher Education Authority. Available from: http://edepositireland.ie/bitstream/handle/2262/80399/hea 2009_flexible_learning_paper.pdf.

Higher Education Authority. (2020). *Higher Education System Performance - Institutional and Sectoral Profiles 2017/2018*. Higher Education Authority. Available from: https://hea.ie/assets/uploads/2021/01/Institutional-Profiles-2017-18-Jan-2021.pdf.

Hildebrandt, K. and Couros, A. (2016). Digital selves, digital scholars: Theorising academic identity in online spaces. *Journal of Applied Social Theory*, 1(1), pp.87–100.

Hillis, K., Paasonen, S. and Petit, M. (2015). *Networked affect*. The MIT Press.

Hinfelaar, M. (2012). Emerging higher education strategy in Ireland: amalgamate or perish. *Higher Education Management and Policy*, 24(1), pp.1–16.

Hitchcock, G. and Hughes, D. (1995). *Research and the teacher: a qualitative introduction to school-based research*. 2nd ed. Routledge.

Hlynka, D. and Jacobsen, M. (2009). What is educational technology, anyway? A commentary on the new AECT definition of the field. *Canadian Journal of*

Learning and Technology / La revue canadienne de l'apprentissage et de la technologie, 35(2).

Hockey, J. (1993). Research methods - researching peers and familiar settings. *Research Papers in Education*, 8(2), pp.199–225.

Holden, H. and Rada, R. (2011). Understanding the Influence of Perceived Usability and Technology Self-Efficacy on Teachers' Technology Acceptance. *Journal of Research on Technology in Education*, 43(4), pp.343–367.

Holloway, I. and Biley, F.C. (2011). Being a Qualitative Researcher. *Qualitative Health Research*, 21(7), pp.968–975.

Holloway, R.E. (1984). Educational Technology: A Critical Perspective. *Information Resources Publications*, 1984.

Hood, C. (1991). A public Management for all Seasons?. *Public Administration*, 69(1), pp.3–19.

Houlden, S. and Veletsianos, G. (2019). A posthumanist critique of flexible online learning and its "anytime anyplace" claims. *British Journal of Educational Technology*, 50(3), pp.1005–1018.

Hovdhaugen, E. (2015). Working while studying: The impact of term-time employment on dropout rates. *Journal of Education and Work*, 28(6), pp.631–651.

Howard, S. and Maton, K. (2011). Theorising knowledge practices: A missing piece of the educational technology puzzle. *ALT-J: Research in Learning Technology*, 19(3), pp.191–206.

Howard, S.K. and Mozejko, A. (2015). Teachers: technology, change and resistance. *Teaching and digital technologies: Big issues and critical questions*, 2015, pp.307–317.

Hoy, A.W., Davis, H. and Pape, S.J. (2006). Teacher knowledge and beliefs. In: *Handbook of educational psychology*. Lawrence Erlbaum Associates Publishers, pp.715–737.

Hsu, Y.-C., Hung, J.-L. and Ching, Y.-H. (2013). Trends of educational technology research: more than a decade of international research in six SSCI-indexed refereed journals. *Educational Technology Research and Development*, 61(4), pp.685–705.

Hughes, J., Thomas, R. and Scharber, C. (2006). Assessing technology integration: The RAT–replacement, amplification, and transformation-framework. In: Society for Information Technology & Teacher Education International Conference. Association for the Advancement of Computing in Education (AACE), pp.1616–1620.

Humphrey, C. (2013). Dilemmas in doing insider research in professional education. *Qualitative Social Work*, 12(5), pp.572–586.

Hutchison, A.C. and Woodward, L. (2018). Examining the technology integration planning cycle model of professional development to support teachers' instructional practices. *Teachers College Record*, 120(10), pp.1–44.

Ignatow, G. (2020). *Sociological Theory in the Digital Age*. Routledge.

Ignatow, G. and Robinson, L. (2017). Pierre Bourdieu: theorizing the digital. *Information, Communication & Society*, 20(7), pp.950–966.

Ireland. (2018). *Technological Universities Act 2018* [online]. Available from: http://www.irishstatutebook.ie/eli/2018/act/3/enacted/en/html [accessed 13 November 2020].

Israel, M. and Hay, I. (2006). *Research ethics for social scientists: between ethical conduct and regulatory compliance*. Sage.

Issroff, K. and Scanlon, E. (2002). Educational Technology: The Influence of Theory. *Journal of Interactive Media in Education*, 2002(1), p.6.

Istance, D. and Kools, M. (2013). OECD Work on Technology and Education: innovative learning environments as an integrating framework. *European Journal of Education*, 48(1), pp.43–57.

ITB. (2005). Mission Statement. , 2005. Available from: https://web.archive.org/web/20051228173034/http://www.itb.ie/site/itbinformation/mission.htm [accessed 14 November 2020].

ITB. (2015). Strategic Plan 2016 - 2019. , 2015. Available from: https://www.itb.ie/AboutITB/documents/StrategicPlan_Dec16_000.pdf.

ITB. (2018). Digital Experience Strategy. , 2018. Available from: https://www.itb.ie/AboutITB/documents/DigitalExperience2018-2020.pdf.

Jääskelä, P., Jääskelä, P., Häkkinen, P., Häkkinen, P., Rasku-Puttonen, H. and Rasku-Puttonen, H. (2017). Teacher Beliefs Regarding Learning, Pedagogy, and the Use of Technology in Higher Education. *Journal of Research on Technology in Education*, 49(3–4), pp.198–211.

Jackson, A.Y. and Mazzei, L.A. (2013). Plugging One Text Into Another: Thinking With Theory in Qualitative Research. *Qualitative Inquiry*, 19(4), pp.261–271.

Jaffer, S. (2010). Educational technology pedagogy: A looseness of fit between learning theories and pedagogy. *Education as Change*, 14(2), pp.273–287.

Jameson, J. (2019). Developing critical and theoretical approaches to educational technology research and practice. *British Journal of Educational Technology*, 50(3), pp.951–955.

Jandrić, P., Hayes, D., Truelove, I., Levinson, P., Mayo, P., Ryberg, T., Monzó, L.D., Allen, Q., Stewart, P.A. and Carr, P.R. (2020). Teaching in the age of Covid-19. *Postdigital Science and Education*, 2(3), pp.1069–1230.

Januszewski, A. and Molenda, M. (2013). *Educational technology: A definition with commentary*. Routledge.

Jayaprakash, S.M., Moody, E.W., Lauría, E.J.M., Regan, J.R. and Baron, J.D. (2014). Early Alert of Academically At-Risk Students: An Open Source Analytics Initiative. *journal of learning analytics*, 1(1), pp.6–47.

Jena, R.K. (2015). Technostress in ICT enabled collaborative learning environment: An empirical study among Indian academician. *Computers in human behavior*, 51(Journal Article), pp.1116–1123.

Jenkins, R. (1992). Pierre Bourdieu: Key Sociologists. *Abingdon: Routledge*, 1992.

Jenkins, R. (2006). *Pierre Bourdieu*. Taylor and Francis.

Jenkins, R. (2014a). *Social identity*. Routledge.

Jenkins, R. (2014b). *Pierre Bourdieu*. Routledge.

John, S.P. (2015). The integration of information technology in higher education: A study of faculty's attitude towards IT adoption in the teaching process. *Contaduría y Administración*, 60(Journal Article), pp.230–252.

Johnson, N.F. (2015). The work of theory in ed-tech research. In: *Critical perspectives on technology and education*. Springer, pp.35–50.

Johri, A. (2011). The socio-materiality of learning practices and implications for the field of learning technology. *ALT-J: Research in Learning Technology*, 19(3), pp.207–217.

Jones, C. (2019). Capital, Neoliberalism and Educational Technology. *Postdigital Science and Education*, 1(2), pp.288–292.

Jones, C. and Czerniewicz, L. (2011). Theory in learning technology. *ALT-J: Research in Learning Technology*, 19(3), pp.173–177.

Jones, W.M. and Dexter, S. (2014). How teachers learn: The roles of formal, informal, and independent learning. *Educational Technology Research and Development*, 62(3), pp.367–384.

Jöns, H. and Hoyler, M. (2013). Global geographies of higher education: The perspective of world university rankings. *Geoforum*, 46, pp.45–59.

Kanuha, V.K. (2000). 'Being' Native versus 'Going Native': Conducting Social Work Research as an Insider. *Social Work*, 45(5), pp.439–447.

Kanuka, H. (2008). Understanding e-learning technologies-in-practice. In: *The theory and practice of online learning*. 1st ed. AU Press, Athabasca University, pp.91–118.

Karnieli-Miller, O., Strier, R. and Pessach, L. (2009). Power Relations in Qualitative Research. *Qualitative Health Research*, 19(2), pp.279–289.

Kelly, H. (2014). A Path Analysis of Educator Perceptions of Open Educational Resources Using the Technology Acceptance Model. *International Review of Research in Open and Distributed Learning*, 15(2), pp.26–42.

Kember, D. and Kwan, K.-P. (2000). Lecturers' approaches to teaching and their relationship to conceptions of good teaching. *Instructional science*, 28(5/6), pp.469–490.

Kennedy, E., Laurillard, D., Horan, B. and Charlton, P. (2015). Making meaningful decisions about time, workload and pedagogy in the digital age: the Course Resource Appraisal Model. *Distance Education: Distance education and time: organizational models for managing time and workload in distance education. Guest Editors: Thomas Hülsmann, Elena Barberà and Jennifer Roberts*, 36(2), pp.177–195.

Kennedy, M.M. (1997). The connection between research and practice. *Educational researcher*, 26(7), pp.4–12.

Kennewell, S. (2001). Using affordances and constraints to evaluate the use of information and communications technology in teaching and learning. *Journal of Information Techology for Teacher Education*, 10(1–2), pp.101–116.

Kenny, J. and Fluck, A.E. (2017). Towards a methodology to determine standard time allocations for academic work. *Journal of Higher Education Policy and Management*, 39(5), pp.503–523.

Kim, C., Kim, M.K., Lee, C., Spector, J.M. and DeMeester, K. (2013). Teacher beliefs and technology integration. *Teaching and Teacher Education*, 29(1), pp.76–85.

Kimmons, R. and Hall, C. (2016). Emerging technology integration models. *Emergence and innovation in digital learning: Foundations and applications*, 2016, pp.51–64.

Kincheloe, J.L., McLaren, P. and Steinberg, S.R. (2011). Critical pedagogy and qualitative research. *The SAGE handbook of qualitative research*, 2011, pp.163–177.

Kinchin, I.M. (2016). *Visualising powerful knowledge to develop the expert student: A knowledge structures perspective on teaching and learning at university*. Springer.

King, A. (1993). From sage on the stage to guide on the side. *College teaching*, 41(1), pp.30–35.

King, A. (2000). Thinking with Bourdieu against Bourdieu: A 'practical'critique of the habitus. *Sociological theory*, 18(3), pp.417–433.

King, E. and Boyatt, R. (2015). Exploring factors that influence adoption of e-learning within higher education. *British Journal of Educational Technology*, 46(6), pp.1272–1280.

King, H. (2004). Continuing Professional Development in Higher Education: what do academics do?. *Planet*, 13(1), pp.26–29.

Kinshuk, Huang, H.-W., Sampson, D. and Chen, N.-S. (2013). Trends in Educational Technology through the Lens of the Highly Cited Articles Published in the Journal of Educational Technology and Society. *Journal of Educational Technology & Society*, 16(2), pp.3–20.

Kintzer, F.C. (1981). The regional technical college system in Ireland. *Higher Educattion in Europe*, 6(4), pp.55–60.

Kirkup, G. and Kirkwood, A. (2005). Information and communications technologies (ICT) in higher education teaching-a tale of gradualism rather than revolution. *Learning, Media and Technology*, 30(2), pp.185–199.

Kirkwood, A. (2009). E-learning: you don't always get what you hope for. *Technology, Pedagogy and Education*, 18(2), pp.107–121.

Kirkwood, A. (2014). Teaching and learning with technology in higher education: blended and distance education needs 'joined-up thinking' rather than technological determinism. *Open Learning: The Journal of Open, Distance and e-Learning*, 29(3), pp.206–221.

Kirkwood, A. and Price, L. (2005). Learners and learning in the twenty-first century: what do we know about students' attitudes towards and experiences of information and communication technologies that will help us design courses? *Studies in Higher Education*, 30(3), pp.257–274.

Kirkwood, A. and Price, L. (2012). The Influence Upon Design of Differing Conceptions of Teaching and Learning with Technology. *Informed Design of*

Educational Technologies in Higher Education : Enhanced Learning and Teaching, 2012, pp.1–20.

Kirkwood, A. and Price, L. (2013a). Missing: evidence of a scholarly approach to teaching and learning with technology in higher education. *Teaching in Higher Education*, 18(3), pp.327–337.

Kirkwood, A. and Price, L. (2013b). Examining some assumptions and limitations of research on the effects of emerging technologies for teaching and learning in higher education. *British Journal of Educational Technology*, 44(4), pp.536–543.

Kirkwood, A. and Price, L. (2014). Technology-enhanced learning and teaching in higher education: what is 'enhanced' and how do we know? A critical literature review. *Learning, Media and Technology*, 39(1), pp.6–36.

Klašnja-Milićević, A., Ivanović, M. and Budimac, Z. (2017). Data science in education: Big data and learning analytics. *Computer Applications in Engineering Education*, 25(6), pp.1066–1078.

Klein, H.K. and Kleinman, D.L. (2002). The social construction of technology: Structural considerations. *Science, Technology, & Human Values*, 27(1), pp.28–52.

Knight, C.G. and Kaye, L.K. (2016). 'To tweet or not to tweet?' A comparison of academics' and students' usage of Twitter in academic contexts. *Innovations in Education and Teaching International*, 53(2), pp.145–155.

Koehler, M.J., Mishra, P. and Yahya, K. (2007). Tracing the development of teacher knowledge in a design seminar: Integrating content, pedagogy and technology. *Computers and education*, 49(3), pp.740–762.

Komljenovic, J. (2020). The future of value in digitalised higher education: why data privacy should not be our biggest concern. *Higher Education*, 2020, pp.1–17.

Komljenovic, J. (2021). The rise of education rentiers: digital platforms, digital data and rents. *Learning, Media and Technology*, 2021, pp.1–13.

Kompf, M. (2005). Information and Communications Technology (ICT) and the seduction of knowledge, teaching, and learning: what lies ahead for education. *Curriculum Inquiry*, 35(2), pp.213–234.

Kopcha, T.J. (2012). Teachers' perceptions of the barriers to technology integration and practices with technology under situated professional development. *Computers & Education*, 59(4), pp.1109–1121.

Korthagen, F.A. (2007). The gap between research and practice revisited. *Educational Research and Evaluation*, 13(3), pp.303–310.

Kozma, R.B. (2005). National Policies that Connect ICT-Based Education Reform to Economic and Social Development. *Human Technology: An Interdisciplinary Journal on Humans in ICT Environments*, 1(2), pp.117–156.

Kozma, R.B. (2008). Comparative analysis of policies for ICT in education. In: *International handbook of information technology in primary and secondary education*. Springer, pp.1083–1096.

Kukulska-Hulme, A. (2012). How should the higher education workforce adapt to advancements in technology for teaching and learning?. *The Internet and Higher Education*, 15(4), pp.247–254.

Kvale, S. (2006). Dominance Through Interviews and Dialogues. *Qualitative Inquiry*, 12(3), pp.480–500.

Kvale, S. and ebrary, I. (2007). *Doing interviews*. SAGE Publications.

Kyvik, S. (2013). Academic workload and working time: Retrospective perceptions versus time-series data. *Higher education quarterly*, 67(1), pp.2–14.

Ladson-Billings, G. (2021). I'm here for the hard re-set: Post pandemic pedagogy to preserve our culture. *Equity & Excellence in Education*, 54(1), pp.68–78.

Laiho, A., Jauhiainen, Arto and Jauhiainen, Annukka. (2020). Being a teacher in a managerial university: academic teacher identity. *Teaching in Higher Education*, 2020, pp.1–18.

Lalor, K. (2010). The same, but different: Salary scales, progression arrangements and duties in Institutes of Technology (IoTs) and Universities. *Administration*, 58(3), pp.79–105.

Land, R. (2006). Paradigms Lost: Academic Practice and Exteriorising Technologies. *E-Learning*, 3(1), p.100.

Larner, W. (2003). Neoliberalism?. *Environment and Planning D: Society and Space*, 21(5), pp.509–512.

Latchem, C. (2014). BJET Editorial: Opening up the educational technology research agenda. *British Journal of Educational Technology*, 45(1), pp.3–11.

Laurillard, D. (2007). Modelling benefits-oriented costs for technology enhanced learning. *Higher Education*, 54(1), pp.21–39.

Laurillard, D. (2008a). Technology Enhanced Learning as a Tool for Pedagogical Innovation. *Journal of Philosophy of Education*, 42(3-4), pp.521–533.

Laurillard, D. (2008b). *Digital Technologies and Their Role in Achieving Our Ambitions for Education*. Institute of Education - London.

Laurillard, D., Oliver, M., Wasson, B. and Hoppe, U. (2009). Implementing technology-enhanced learning. In: *Technology-Enhanced Learning: Principles and Products*. Springer, pp.289–306.

Levidow, L. (2002). Marketizing higher education: Neoliberal strategies and counter-strategies. *The virtual university*, 2002, pp.227–248.

Lewis, T., Marginson, S. and Snyder, I. (2005). The network university? Technology, culture and organisational complexity in contemporary higher education. *Higher Education Quarterly*, 59(1), pp.56–75.

Li, L. and Wang, X. (2021). Technostress inhibitors and creators and their impacts on university teachers' work performance in higher education. *Cognition, Technology & Work*, 23(2), pp.315–330.

Lin, T.-C., Tsai, C.-C., Chai, C.S. and Lee, M.-H. (2013). Identifying Science Teachers' Perceptions of Technological Pedagogical and Content Knowledge (TPACK). *Journal of Science Education and Technology*, 22(3), pp.325–336.

Lincoln, Y.S. and Guba, E.G. (1986). But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New directions for program evaluation*, 1986(30), pp.73–84.

Liu, S.-H. (2011). Factors related to pedagogical beliefs of teachers and technology integration. *Computers & Education*, 56(4), pp.1012–1022.

Lockyer, L., Heathcote, E. and Dawson, S. (2013). Informing Pedagogical Action: Aligning Learning Analytics With Learning Design. *american behavioral scientist*, 57(10), pp.1439–1459.

Lonn, S. and Teasley, S.D. (2009). Saving time or innovating practice: Investigating perceptions and uses of Learning Management Systems. *Computers & education*, 53(3), pp.686–694.

Lorenz, C. (2012). If You're So Smart, Why Are You under Surveillance? Universities, Neoliberalism, and New Public Management. *Critical Inquiry*, 38(3), pp.599–629.

Loughlin, C. (2017). Staff Perceptions of Technology Enhanced Learning in Higher Education. *European Conference on e-Learning*, 2017, pp.335–343.

Loxley, A. (2014). Measures and metrics and academic labour. In: *Higher education in Ireland*. Springer, pp.123–145.

Luppicini, R. (2005). A Systems Definition of Educational Technology in Society. *Journal of Educational Technology & Society*, 8(3), pp.103–109.

Lupton, D. (2014). *Digital sociology*. Routledge.

Lupton, D., Mewburn, I. and Thomson, P. (2018). *The digital academic: critical perspectives on digital technologies in higher education*. Routledge.

Lynch, K. (2006). Neo-liberalism and marketisation: The implications for higher education. *European educational research journal*, 5(1), p.17.

Lynch, K. (2015). Control by numbers: new managerialism and ranking in higher education. *Critical Studies in Education*, 56(2), pp.190–207.

Lynch, K., Grummell, B. and Devine, D. (2012). *New managerialism in education: commercialization, carelessness, and gender*. Palgrave Macmillan.

Macfarlane, B. (2011). The morphing of academic practice: Unbundling and the rise of the para-academic. *Higher Education Quarterly*, 65(1), pp.59–73.

Mack, L. (2010). The philosophical underpinnings of educational research. *Polyglossia*, 19, pp.1–11.

Malcolm, J. and Zukas, M. (2009). Making a mess of academic work: experience, purpose and identity. *Teaching in Higher Education*, 14(5), pp.495–506.

Malone, F. (2018). *An exploration of gender and academic management in Irish institutes of technology* [unpublished]. Dublin City University.

Mama, M. and Hennessy, S. (2013). Developing a typology of teacher beliefs and practices concerning classroom use of ICT. *Computers & Education*, 68(Journal Article), pp.380–387.

Mao, J., Ifenthaler, D., Fujimoto, T., Garavaglia, A. and Rossi, P.G. (2019). National Policies and Educational Technology: a Synopsis of Trends and Perspectives from Five Countries. *TechTrends*, 63(3), pp.284–293.

Marachi, R. and Quill, L. (2020). The case of Canvas: Longitudinal datafication through learning management systems. *Teaching in higher education*, 25(4), pp.418–434.

Marshall, M.N. (1996). Sampling for qualitative research. *Family practice*, 13(6), pp.522–526.

Martin, S., Diaz, G., Sancristobal, E., Gil, R., Castro, M. and Peire, J. (2011). New technology trends in education: Seven years of forecasts and convergence. *Computers & Education*, 57(3), pp.1893–1906.

Martín-Gutiérrez, J., Mora, C.E., Añorbe-Díaz, B. and González-Marrero, A. (2017). Virtual technologies trends in education. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(2), pp.469–486.

Marton, K. (2005). A question of autonomy: Bourdieu's field approach and higher education policy. *Journal of education policy*, 20(6), p.704.

Mason, J. (2002). *Qualitative researching*. 2nd ed. SAGE.

Maton. (2010). Habitus. In: Grenfell, M., ed. *Pierre Bourdieu: Key Concepts*. 1st ed. Acumen, pp.49–67.

Matzen, N.J. and Edmunds, J.A. (2007). Technology as a catalyst for change: The role of professional development. *Journal of research on technology in education*, 39(4), pp.417–430.

Mayes, J.T. (1995). Learning technology and groundhog day. *Hypermedia at work: Practice and theory in higher education*, 1, pp.21–37.

Maynooth University. (2018). *Maynooth University Strategic Plan 2018-2022* [online]. Maynooth University. Available from: https://www.maynoothuniversity.ie/about-us/university-strategic-plan [accessed 8 November 2018].

McCune, V. (2019). Academic identities in contemporary higher education: sustaining identities that value teaching. *Teaching in Higher Education*, 2019, pp.1–16.

McGarr, O. and Johnston, K. (2019). Exploring the Evolution of Educational Technology Policy in Ireland: From Catching-Up to Pedagogical Maturity. *Educational Policy*, 2019, pp.1–25.

McIntosh, K. (2010). E-teaching in e-workplaces: The affective nexus. *International Journal of Advanced Corporate Learning (iJAC)*, 3(1), pp.17–25.

McIntyre, D. (2005). Bridging the gap between research and practice. *Cambridge journal of education*, 35(3), pp.357–382.

McNaughton, S.M. and Billot, J. (2016). Negotiating academic teacher identity shifts during higher education contextual change. *Teaching in Higher Education*, 21(6), pp.644–658.

McShane, K. (2004). Integrating face-to-face and online teaching: academics' role concept and teaching choices. *Teaching in higher education*, 9(1), pp.3–16.

McShane, K.F. (2006). *Technologies transforming academics: Academic identity and online teaching* [unpublished]. University of Technology, Sydney.

Meagher, M. (2017). *The Evolving Role of Head of Department in Irish Higher Education* [unpublished]. Maynooth University.

Meishar-Tal, H. and Levenberg, A. (2021). In times of trouble: Higher education lecturers' emotional reaction to online instruction during COVID-19 outbreak. *Education and Information Technologies*, 2021, pp.1–17.

Mendzheritskaya, J. and Hansen, M. (2019). The role of emotions in higher education teaching and learning processes. *Studies in Higher Education*, 44(10), pp.1709–1711.

Mercer, J. (2007). The challenges of insider research in educational institutions: Wielding a double-edged sword and resolving delicate dilemmas. *Oxford Review of Education*, 33(1), pp.1–17.

Merriam, S.B. (1988). *Case study research in education: A qualitative approach.* Jossey-Bass.

Merriam, S.B. (1998). *Qualitative research and case study applications in education*. 2nd ed. Jossey-Bass Publishers.

Merriam, S.B. and Tisdell, E.J. (2015). *Qualitative research: A guide to design and implementation*. John Wiley & Sons.

Miles, M.B. and Huberman, A.M. (1994). *Qualitative data analysis: An expanded sourcebook*. sage.

Mishra, P. and Koehler, M.J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers college record*, 108(6), pp.1017–1054.

Molesworth, M., Nixon, E. and Scullion, R. (2009). Having, being and higher education: the marketisation of the university and the transformation of the student into consumer. *Teaching in higher education*, 14(3), pp.277–287.

Moore, J.L., Dickson-Deane, C. and Galyen, K. (2011). e-Learning, online learning, and distance learning environments: Are they the same?. *The Internet and Higher Education*, 14(2), pp.129–135.

Moore, R. (2010). Capital. In: Grenfell, M., ed. *Pierre Bourdieu: key concepts*. 2nd ed. Acumen Publishing.

Morley, L. (2016). Troubling intra-actions: gender, neo-liberalism and research in the global academy. *Journal of Education Policy: The Geography of Policy*, 31(1), pp.28–45.

Morozov, E. (2013). *To save everything, click here: The folly of technological solutionism*. Public Affairs.

Morse, J.M., Barrett, M., Mayan, M., Olson, K. and Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International journal of qualitative methods*, 1(2), pp.13–22.

Mowery, D.C. (2011). Learning from one another? International policy ‘emulation’ and university-industry technology transfer. *Industrial and Corporate Change*, 20(6), pp.1827–1853.

Munro, M. (2018). The complicity of digital technologies in the marketisation of UK higher education: exploring the implications of a critical discourse analysis of thirteen national digital teaching and learning strategies. *International Journal of Educational Technology in Higher Education*, 15(1), pp.1–20.

Munro, M.E. (2016). *A decade of e-learning policy in higher education in the United Kingdom: a critical analysis* [unpublished]. ProQuest Dissertations Publishing.

Murthy, D. (2008). Digital ethnography: An examination of the use of new technologies for social research. *Sociology*, 42(5), pp.837–855.

Naidoo, L. (2009). Developing social inclusion through after-school homework tutoring: a study of African refugee students in Greater Western Sydney. *British Journal of Sociology of Education*, 30(3), pp.261–273.

Naidoo, R. and Jamieson, I. (2005). Knowledge in the marketplace: The global commodification of teaching and learning in higher education. In: *Internationalizing higher education*. Springer, pp.37–51.

Nam, T. (2014). Technology use and work-life balance. *Applied Research in Quality of Life*, 9(4), pp.1017–1040.

Nash, R. (1999). Bourdieu, ‘Habitus’, and Educational Research: Is it all worth the candle? *British Journal of Sociology of Education*, 20(2), pp.175–187.

National Forum. (2014). *Principles and first insights from the sectoral consultation – with preliminary recommendations and actionable first steps*. National Forum for the Enhancement of Teaching and Learning in Irish Higher Education. Available from: http://www.teachingandlearning.ie/wp-content/uploads/2014/05/Digital-Roadmap- PHASE1MAY282014.pdf.

National Forum. (2015). *Strategic and Leadership Perspectives on Digital Capacity in Irish Higher Education*. National Forum for the Enhancement of Teaching and Learning in Irish Higher Education. Available from: http://www.teachingandlearning.ie/wpcontent/ uploads/2014/03/Senior-Management-FINAL.pdf.

National Forum. (2018). *A Review of the Existing Higher Education Policy Landscape for Digital Teaching and Learning in Ireland*. National Forum for the Enhancement of Teaching and Learning in Irish Higher Education. Available from: https://www.teachingandlearning.ie/wpcontent/uploads/2018/07/Enabling-Policies-Review-Report-Final-Web-Ready.pdf.

National Forum. (2020). *Irish National Digital Experience (INDEx) Survey: Findings from students and staff who teach in higher education*. National Forum for the Enhancement of Teaching and Learning in Irish Higher Education. Available from: https://www.teachingandlearning.ie/publication/irish-national-digital-experience-index-survey-findings-from-students-and-staff-who-teach-in-higher-education/.

National University of Ireland Galway. (2015). *Vision 2020 - NUI Galway* [online]. National University of Ireland Galway. Available from: https://www.nuigalway.ie/vision2020/ [accessed 15 November 2018].

Natividad, G., Spector, J.M. and Evangelopoulos, N. (2018). Research topics and trends in educational technology. *Lecture Notes in Educational Technology*, 2018, pp.85–94.

Naylor, D. and Nyanjom, J. (2020). Educators' emotions involved in the transition to online teaching in higher education. *Higher Education Research & Development*, 2020, pp.1–15.

Nespor, J. (1987). The role of beliefs in the practice of teaching. *Journal of curriculum studies*, 19(4), pp.317–328.

Nespor, J. (1994). *Knowledge in Motion: Space, Time, and Curriculum in Undergraduate Physics and Management*. Psychology Press.

Nguyen, T. (2020). Faculty open up about mental health under a pandemic. *Chemical & Engineering News*, 98(20), pp.24–26.

Niemann, D. and Martens, K. (2018). Soft governance by hard fact? The OECD as a knowledge broker in education policy. *Global Social Policy*, 18(3), pp.267–283.

Njenga, J.K. and Fourie, L.C.H. (2010). The myths about e-learning in higher education. *British Journal of Educational Technology*, 41(2), pp.199–212.

Noble, D.F. (2002). Technology and the commodification of higher education. *Monthly Review*, 53(10), pp.26–40.

Nowell, L.S., Norris, J.M., White, D.E. and Moules, N.J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International journal of qualitative methods*, 16(1), p.1609406917733847.

Nyanjom, J. and Naylor, D. (2020). Performing emotional labour while teaching online. *Educational Research*, 2020, pp.1–17.

Oblinger, D.G. (2006). Space as a change agent. *Learning spaces*, 1, pp.1–2.

O'Brien, C. (2019). New technological university Ireland's largest third-level body. *Irish Times* [online], 1 January 2019. Available from: https://www.irishtimes.com/news/education/new-technological-university-ireland-s-largest-third-level-body-1.3745525 [accessed 14 November 2020].

O'Byrne, C. (2011). Against the odds: researcher development in teaching-focused HEIs. *International Journal for Researcher Development*, 2011.

OECD. (2005). *E-learning in Tertiary Education: Where Do We Stand?*. Organisation for Economic Co-operation and Development.

OECD. (2006). *Reviews of National Policies for Education Higher Education in Ireland*. Organisation for Economic Co-operation and Development.

OECD. (2016). *Innovating education and educating for innovation: the power of digital technologies and skills*. OECD.

Oliver, M. (2002). What do Learning Technologists do?. *Innovations in Education and Teaching International*, 39(4), pp.245–252.

Oliver, M., Conole, G., Cook, J., Ravenscroft, A. and Currier, S. (2002). Multiple perspective and theoretical dialogue in learning technology. In: ASCILITE. pp.909–917.

Oliver, M. (2005). The problem with affordance. *E-Learning and Digital Media*, 2(4), pp.402–413.

Oliver, M. (2011). Technological determinism in educational technology research: some alternative ways of thinking about the relationship between learning and technology. *Journal of Computer Assisted Learning*, 27(5), pp.373–384.

Oliver, M. (2012). Technology and change in academic practice. In: *Tribes and Territories in the 21st Century: Rethinking the Significance of Disciplines in Higher Education*. Routledge.

Oliver, M. (2013). Learning technology: Theorising the tools we study. *British Journal of Educational Technology*, 44(1), pp.31–43.

Olson, D.R. and Bruner, J.S. (2008). Folk Psychology and Folk Pedagogy. In: *The Handbook of Education and Human Development: New Models of Learning, Teaching and Schooling*.

Olssen, M. and Peters, M.A. (2005). Neoliberalism, higher education and the knowledge economy. from the free market to knowledge capitalism. *Journal of education policy*, 20(3), p.345.

O'Regan, K. (2003). Emotion and e-learning. *Journal of Asynchronous learning networks*, 7(3), pp.78–92.

O'Reilly, M. and Kiyimba, N. (2015). *Advanced qualitative research: A guide to using theory*. Sage.

Orlando, J. (2014). Educational technology: a presupposition of equality?. *Asia-Pacific Journal of Teacher Education: Democracy, critique and the presupposition of knowledge: teachers as capable, resourceful theorists*, 42(4), pp.347–362.

Orlikowski, W.J. (2007). Sociomaterial Practices: Exploring Technology at Work. *Organization Studies*, 28(9), pp.1435–1448.

Ormston, R., Spencer, L., Barnard, M. and Snape, D. (2014). The foundations of qualitative research. *Qualitative research practice: A guide for social science students and researchers*, 2, pp.52–55.

Owen, M.S., Kavanagh, P.S. and Dollard, M.F. (2018). An integrated model of work–study conflict and work–study facilitation. *Journal of Career Development*, 45(5), pp.504–517.

Oyedotun, T.D. (2020). Sudden change of pedagogy in education driven by COVID-19: Perspectives and evaluation from a developing country. *Research in Globalization*, 2, p.100029.

Paasonen, S. (2015). As Networks Fail: Affect, Technology, and the Notion of the User. *Television & new media*, 16(8), pp.701–716.

Pajares, M.F. (1992). Teachers' Beliefs and Educational Research: Cleaning up a Messy Construct. *Review of Educational Research*, 62(3), pp.307–332.

Palinkas, L.A., Palinkas, L.A., Horwitz, S.M., Horwitz, S.M., Green, C.A., Green, C.A., Wisdom, J.P., Wisdom, J.P., Duan, N., Duan, N., Hoagwood, K. and Hoagwood, K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), pp.533–544.

Pandya, B., Patterson, L. and Cho, B. (2021). Pedagogical transitions experienced by higher education faculty members–"Pre-Covid to Covid". *Journal of Applied Research in Higher Education*, 2021.

Pardo, A., Jovanovic, J., Dawson, S., Gašević, D. and Mirriahi, N. (2019). Using learning analytics to scale the provision of personalised feedback. *British journal of educational technology*, 50(1), pp.128–138.

Patton, M.Q. (2002). *Qualitative research and evaluation methods*. 3rd ed. Sage Publications.

Paulus, T., Woods, M., Atkins, D.P. and Macklin, R. (2017). The discourse of QDAS: reporting practices of ATLAS.ti and NVivo users with implications for best practices. *International Journal of Social Research Methodology*, 20(1), pp.35–47.

Pearce, N., Weller, M., Scanlon, E. and Kinsley, S. (2010). Digital Scholarship Considered: How New Technologies Could Transform Academic Work. *In Education*, 16(1), p.1.

Penado Abilleira, M., Rodicio-García, M.-L., Ríos-de Deus, M.P. and Mosquera-González, M.J. (2021). Technostress in Spanish University Teachers During the COVID-19 Pandemic. *Frontiers in Psychology*, 12, p.496.

Peruski, L. and Mishra, P. (2004). Webs of activity in online course design and teaching. *ALT-J*, 12(1), pp.37–49.

Petko, D. (2012). Teachers' pedagogical beliefs and their use of digital media in classrooms: Sharpening the focus of the 'will, skill, tool' model and integrating teachers' constructivist orientations. *Computers & Education*, 58(4), pp.1351–1359.

Pink, S., Horst, H., Postill, J., Hjorth, L., Lewis, T. and Tacchi, J. (2015). *Digital ethnography: Principles and practice*. Sage.

Pittard, V. (2004). Evidence for e-learning policy. *Technology, Pedagogy and Education*, 13(2), pp.181–194.

Player-Koro, C., Bergviken Rensfeldt, A. and Selwyn, N. (2018). Selling tech to teachers: education trade shows as policy events. *Journal of Education Policy*, 33(5), pp.682–703.

Plesch, C., Kaendler, C., Rummel, N., Wiedmann, M. and Spada, H. (2013). Identifying areas of tension in the field of technology-enhanced learning: results of an international delphi study. *Computers & Education*, 65, pp.92–105.

Ponterotto, J.G. (2005). Qualitative Research in Counseling Psychology: A Primer on Research Paradigms and Philosophy of Science. *Journal of Counseling Psychology*, 52(2), pp.126–136.

Poon, T.S. (2006). The commodification of higher education: implications for academic work and employment. *International Journal of Employment Studies*, 14(1), p.81.

Postareff, L. and Lindblom-Ylänne, S. (2011). Emotions and confidence within teaching in higher education. *Studies in Higher Education*, 36(7), pp.799–813.

Postman, N. (2011). *The end of education: Redefining the value of school*. Vintage.

Potter, J. and Wetherell, M. (1987). *Discourse and social psychology: Beyond attitudes and behaviour*. Sage.

Prensky, M. (2001). Digital Natives, Digital Immigrants Part 1. *On the Horizon*, 9(5), pp.1–6.

Prestridge, S. (2012). The beliefs behind the teacher that influences their ICT practices. *Computers & Education*, 58(1), pp.449–458.

Price, L. and Kirkwood, A. (2014). Using technology for teaching and learning in higher education: A critical review of the role of evidence in informing practice. *Higher Education Research and Development*, 33(3), pp.549–564.

Price, S. and Oliver, M. (2007). A Framework for Conceptualising the Impact of Technology on Teaching and Learning. *Journal of Educational Technology & Society*, 10(1), pp.16–27.

Prinsloo, P. (2017). Fleeing from Frankenstein's monster and meeting Kafka on the way: Algorithmic decision-making in higher education. *E-Learning and Digital Media*, 14(3), pp.138–163.

Prior, L. (2016). Using documents in social research. *Qualitative research*, 2016, pp.171–185.

Puentedura, R. (2006). Transformation, Technology, and Education. Retrieved 28 May, 2015. , 2006. Available from: http://hippasus.com/resources/tte/puentedura_tte.pdf.

Purdue, D.E. and Howe, P.D. (2015). Plotting a Paralympic field: An elite disability sport competition viewed through Bourdieu's sociological lens. *International review for the sociology of sport*, 50(1), pp.83–97.

Quinlan, K.M. (2016). How Emotion Matters in Four Key Relationships in Teaching and Learning in Higher Education. *College teaching*, 64(3), pp.101–111.

Raffaghelli, J.E., Manca, S., Stewart, B., Prinsloo, P. and Sangrà, A. (2020). Supporting the development of critical data literacies in higher education: building blocks for fair data cultures in society. , 2020.

Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L. and Koole, M. (2020). Online university teaching during and after the Covid-19 crisis: Refocusing teacher presence and learning activity. *Postdigital Science and Education*, 2(3), pp.923–945.

Reay, D. (1995). 'They Employ Cleaners to Do That': Habitus in the Primary Classroom. *British Journal of Sociology of Education*, 16(3), pp.353–371.

Reay, D. (2004). 'It's all becoming a habitus': beyond the habitual use of habitus in educational research. *British Journal of Sociology of Education*, 25(4), pp.431–444.

Reay, D. (2015). Habitus and the psychosocial: Bourdieu with feelings. *Cambridge journal of education*, 45(1), pp.9–23.

Reeves, S., Albert, M., Kuper, A. and Hodges, B.D. (2008). Qualitative Research: Why Use Theories in Qualitative Research?. *BMJ: British Medical Journal*, 337(7670), pp.631–634.

Reeves, T. (2005). No significant differences revisited: A historical perspective on the research informing contemporary online learning. *Online learning: Personal reflections on the transformation of education*, 2005, pp.299–308.

Reeves, T.C., Reeves, T.C., Oh, E.G. and Oh, E.G. (2017). The goals and methods of educational technology research over a quarter century (1989–2014). *Educational Technology Research and Development*, 65(2), pp.325–339.

Reilly, J.R., Gallagher-Lepak, S. and Killion, C. (2012). "Me and my computer": emotional factors in online learning. *Nursing education perspectives*, 33(2), pp.100–105.

Reiser, R.A. and Ely, D.P. (1997). The Field of Educational Technology as Reflected through Its Definitions. *Educational Technology Research and Development*, 45(3), pp.63–72.

Resnick, M. (2002). Rethinking learning in the digital age. In: *Readiness for the Networked World*. Oxford University Press.

Reyes, V.C., Reading, C., Doyle, H. and Gregory, S. (2017). Integrating ICT into teacher education programs from a TPACK perspective: Exploring perceptions of university lecturers. *Computers & Education*, 115(Journal Article), pp.1–19.

Rhoades, G. and Slaughter, S. (2004). Academic capitalism in the new economy: Challenges and choices. *American Academic*, 1(1), pp.37–59.

Rienties, B., Brouwer, N., Bohle Carbonell, K., Townsend, D., Rozendal, A.-P., van der Loo, J., Dekker, P. and Lygo-Baker, S. (2013). Online training of TPACK skills of higher education scholars: a cross-institutional impact study. *European Journal of Teacher Education*, 36(4), pp.480–495.

Rienties, B., Brouwer, N. and Lygo-Baker, S. (2013). The effects of online professional development on higher education teachers' beliefs and intentions towards learning facilitation and technology. *Teaching and teacher education*, 29(1), pp.122–131.

Rienties, B. and Hosein, A. (2015). Unpacking (in) formal learning in an academic development programme: A mixed-method social network perspective. *International Journal for Academic Development*, 20(2), pp.163–177.

van der Rijst, R., Baggen, Y. and Sjoer, E. (2019). University teachers' learning paths during technological innovation in education. *International Journal for Academic Development*, 24(1), pp.7–20.

Ritzer, G. (2011). *Sociological theory*. 8th ed. McGraw-Hill.

Rizvi, F. and Lingard, B. (2010). *Globalizing Education Policy*. Routledge.

Robbins, D. (2008). Theory of practice. In: *Pierre Bourdieu: Key Concepts*. Acumen.

Roberts, S., Snee, H., Hine, C., Morey, Y. and Watson, H. (2016). *Digital methods for social science: An interdisciplinary guide to research innovation*. Springer.

Robins, K. and Webster, F. (2002). The virtual university?. In: *Robins, Kevin, and Frank Webster, eds. The virtual university?: knowledge, markets, and management.* Oxford University Press.

Robins, K. and Webster, Frank. (1989). *The Technical Fix: Education, Computers and Industry*. Macmillan International Higher Education.

Rogers, E.M. (2010). *Diffusion of innovations*. Simon and Schuster.

Roushan, G., Holley, D. and Biggins, D. (2016). The kaleidoscope of voices: An action research approach to informing institutional e-learning policy. *Electronic Journal of e-Learning*, 14(5), pp.293–300.

Rowlands, J. (2018). Deepening understandings of Bourdieu's academic and intellectual capital through a study of academic voice within academic governance. *Studies in Higher Education*, 43(11), pp.1823–1836.

Roxå, T. and Mårtensson, K. (2015). Microcultures and informal learning: A heuristic guiding analysis of conditions for informal learning in local higher education workplaces. *International Journal for Academic Development*, 20(2), pp.193–205.

Rubin, H.J. and Rubin, I. (2005). *Qualitative interviewing: the art of hearing data*. 2nd ed. Sage Publications.

Rushby, N. and Surry, D.W. (2016). Mapping the Field and Terminology. *The Wiley Handbook of Learning Technology*, 1, p.1.

Russell, T.L. (1999). *The no significant difference phenomenon: As reported in 355 research reports, summaries and papers*. North Carolina State University.

Saettler, P. (2004). *The evolution of American educational technology*. IAP.

Salajan, F.D. and Roumell, E.A. (2016). Two Decades of E-Learning Policy Evolution at EU Level: motivations, institutions and instruments. *European Journal of Education*, 51(3), pp.391–407.

Saldaña, J. (2013). *The coding manual for qualitative researchers*. 2nd ed. Sage.

Salomon, G. (2002). Technology and pedagogy: Why don't we see the promised revolution? *Educational technology*, 42(2), pp.71–75.

Sandelowski, M. (1993). Theory unmasked: the uses and guises of theory in qualitative research. *Research in nursing & health*, 16(3), pp.213–218.

Sappey, J. and Relf, S. (2010). Digital Technology Education and Its Impact on Traditional Academic Roles and Practice. *Journal of University Teaching and Learning Practice*, 7(1).

Saunders, D.B. (2010). Neoliberal Ideology and Public Higher Education in the United States. *Journal for Critical Education Policy Studies*, 8(1), pp.41–77.

Scanlon, E. (2014). Scholarship in the digital age: Open educational resources, publication and public engagement. *British Journal of Educational Technology*, 45(1), pp.12–23.

Scanlon, E. (2018). Digital Scholarship: Identity, Interdisciplinarity, and Openness. *Frontiers in Digital Humanities*, 5.

Scherer, R., Siddiq, F. and Tondeur, J. (2019). The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. *Computers & Education*, 128(Journal Article), pp.13–35.

Schmidt, D.A., Baran, E., Thompson, A.D., Mishra, P., Koehler, M.J. and Shin, T.S. (2009). Technological Pedagogical Content Knowledge (TPACK): The Development and Validation of an Assessment Instrument for Preservice Teachers. *Journal of Research on Technology in Education*, 42(2), pp.123–149.

Schneckenberg, D. (2009). Understanding the real barriers to technology-enhanced innovation in higher education. *Educational Research*, 51(4), pp.411–424.

Schneckenberg, D. (2010). Overcoming barriers for eLearning in universities—portfolio models for eCompetence development of faculty. *British Journal of Educational Technology*, 41(6), pp.979–991.

Schön, D.A. (1995). Knowing-in-Action: The New Scholarship Requires a New Epistemology. *Change*, 27(6), pp.26–34.

Schubert, J.D. (2012). Suffering/symbolic violence. In: *Pierre Bourdieu: Key Concepts, Second Edition*.

Schwandt, T.A. (2000). Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics, and social constructionism. *Handbook of qualitative research*, 2, pp.189–213.

Sclater, N., Peasgood, A. and Mullan, J. (2016). Learning analytics in higher education. *London: Jisc. Accessed February*, 8(2017), p.176.

Scott, D. and Usher, R. (2002). *Understanding Educational Research*. Routledge.

Scott, K.M. (2016). Change in university teachers' elearning beliefs and practices: a longitudinal study. *Studies in higher education (Dorchester-on-Thames)*, 41(3), pp.582–598.

Seels, B.B. and Richey, R.C. (2012). *Instructional technology: The definition and domains of the field*. IAP.

Sellar, S. and Lingard, B. (2014). The OECD and the expansion of PISA: new global modes of governance in education. *British Educational Research Journal*, 40(6), pp.917–936.

Selwyn, N. (2004). Reconsidering political and popular understandings of the digital divide. *New media & society*, 6(3), pp.341–362.

Selwyn, N. (2007). The use of computer technology in university teaching and learning: a critical perspective. *Journal of Computer Assisted Learning*, 23(2), pp.83–94.

Selwyn, N. (2009). The digital native – myth and reality. *Aslib proceedings*, 61(4), pp.364–379.

Selwyn, N. (2010). Looking beyond learning: Notes towards the critical study of educational technology. *Journal of Computer Assisted Learning*, 26(1), pp.65–73.

Selwyn, N. (2011). *Education and technology: key issues and debates*. 1st ed. Continuum International Pub. Group.

Selwyn, N. (2012a). Making sense of young people, education and digital technology: the role of sociological theory. *Oxford Review of Education*, 38(1), pp.81–96.

Selwyn, N. (2012b). *Education in a digital world: Global perspectives on technology and education*. Routledge.

Selwyn, N. (2012c). Ten suggestions for improving academic research in education and technology. *Learning, Media and Technology*, 37(3), pp.213–219.

Selwyn, N. (2013a). Discourses of digital 'disruption' in education: a critical analysis. *Fifth International Roundtable on Discourse Analysis, City University, Hong Kong*, 2013, pp.23–25.

Selwyn, N. (2013b). *Distrusting educational technology: Critical questions for changing times*. Routledge.

Selwyn, N. (2013c). Education, Technology and National Policymaking. In: *Education in a Digital World*. Routledge, pp.75–96.

Selwyn, N. (2015). Technology and education—why it's crucial to be critical. In: *Critical perspectives on technology and education*. Springer, pp.245–255.

Selwyn, N. (2016a). Digital downsides: Exploring university students' negative engagements with digital technology. *Teaching in Higher Education*, 21(8), pp.1006–1021.

Selwyn, N. (2016b). *Is technology good for education?*. Malden, MA.

Selwyn, N. (2016c). Minding our language: why education and technology is full of bullshit…and what might be done about it. *Learning Media And Technology*, 41(3), pp.437–443.

Selwyn, N. (2019a). Should Robots Replace Teachers? AI and the Future of Education. *John Wiley & Sons, Inc*, 2019.

Selwyn, N. (2019b). *What is digital sociology?*. John Wiley & Sons.

Selwyn, N., O'Neill, C., Smith, G., Andrejevic, M. and Gu, X. (2021). A necessary evil? The rise of online exam proctoring in Australian universities. *Media International Australia*, 2021, p.1329878X211005862.

Selwyn, N. and Facer, K. (2014). The sociology of education and digital technology: past, present and future. *Oxford Review Of Education*, 40(4), pp.482–496.

Serrano-Puche, J. (2016). Internet and emotions: New trends in an emerging field of research. *Comunicar. Media Education Research Journal*, 24(1).

Shaw, I.F. (2003). Ethics in qualitative research and evaluation. *Journal of Social Work*, 3(1), pp.9–29.

Shelton, C. (2018). An ecological model for university faculty members' thinking about technology. *Journal of Computing in Higher Education*, 30(2), pp.279–297.

Shenton, A.K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for information*, 22(2), pp.63–75.

Shephard, K. (2004). The role of educational developers in the expansion of educational technology. *International Journal for Academic Development*, 9(1), pp.67–83.

Shirky, C. (2008). *Here comes everybody: The power of organizing without organizations*. Penguin.

Shore, C. (2010). Beyond the multiversity: neoliberalism and the rise of the schizophrenic university. *Social Anthropology*, 18(1), pp.15–29.

Shore, C. and Wright, S. (1999). Audit Culture and Anthropology: Neo-Liberalism in British Higher Education. *The Journal of the Royal Anthropological Institute*, 5(4), pp.557–575.

Shum, S.B. and Ferguson, R. (2012). Social Learning Analytics. *Educational technology & society*, 15(3), pp.3–26.

Shurville, S., Browne, T. and Whitaker, M. (2009). Accommodating the newfound strategic importance of educational technologists within higher education: A critical literature review. *Campus-Wide Information Systems*, 2009.

Siccama, C.J. and Penna, S. (2008). Enhancing Validity of a Qualitative Dissertation Research Study by Using NVIVO. *Qualitative Research Journal*, 8(2), pp.91–103.

Siemens, G., Gasevic, D., Haythornthwaite, C., Dawson, S., Shum, S.B., Ferguson, R., Duval, E., Verbert, K. and Baker, R. (2011). Open Learning Analytics: an integrated & modularized platform. , 2011.

Siemens, G. and Long, P. (2011). Penetrating the fog: Analytics in learning and education. *EDUCAUSE review*, 46(5), p.30.

Singh, G. and Hardaker, G. (2017). Change levers for unifying top-down and bottom-up approaches to the adoption and diffusion of e-learning in higher education. *Teaching in Higher Education*, 22(6), pp.736–748.

Slade, S. and Prinsloo, P. (2013). Learning analytics: Ethical issues and dilemmas. *American Behavioral Scientist*, 57(10), pp.1510–1529.

Slaughter, S. and Leslie, L.L. (1997). *Academic Capitalism: Politics, Policies, and the Entrepreneurial University*. The Johns Hopkins University Press.

Smith, J. and Oliver, M. (2000). Academic development: A framework for embedding learning technology. *International Journal for Academic Development*, 5(2), pp.129–137.

Smith, J.A. (2004). Reflecting on the development of interpretative phenomenological analysis and its contribution to qualitative research in psychology. *Qualitative Research in Psychology*, 1(1), pp.39–54.

Smith, K.M. (2006). Higher education culture and the diffusion of technology in classroom instruction. In: *Knowledge management and higher education: A critical analysis*. IGI Global, pp.222–241.

Smith, K.M. and Jeffery, D.I. (2013). Critical pedagogies in the neoliberal university: What happens when they go digital?: Critical pedagogies in the neoliberal university. *The Canadian Geographer*, 57(3), pp.372–380.

Smith, M.R. and Marx, L. (1994). *Does technology drive history?: The dilemma of technological determinism*. Mit Press.

Somekh, B. (2008). Factors affecting teachers' pedagogical adoption of ICT. In: *International handbook of information technology in primary and secondary education*. Springer, pp.449–460.

Somekh, B. and Davis, N. (1997). *Using information technology effectively in teaching and learning: Studies in pre-service and in-service teacher education*. Psychology Press.

Spector, J.M. (2020). Remarks on progress in educational technology. *Educational Technology Research and Development*, 14 January 2020. Available from: https://doi.org/10.1007/s11423-020-09736-x.

Stahl, G., Burnard, P. and Perkins, R. (2017). Critical Reflections on the Use of Bourdieu's Tools 'In Concert' to Understand the Practices of Learning in Three Musical Sites. *Sociological research online*, 22(3), pp.57–77.

Stake, R.E. (1995). *The art of case study research*. Sage Publications.

Sterne, J. (2003). Bourdieu, Technique And Technology. *Cultural Studies*, 17(3–4), pp.367–389.

Stommel, J., Friend, C. and Morris, S.M. (2020). *Critical Digital Pedagogy*.

Straub, E.T. (2009). Understanding technology adoption: Theory and future directions for informal learning. *Review of educational research*, 79(2), pp.625–649.

Surry, D.W. and Farquhar, J.D. (1997). Diffusion theory and instructional technology. *Journal of Instructional Science and Technology*, 2(1), pp.1–14.

Susen, S. (2011). Epistemological tensions in Bourdieu's conception of social science. *Theory of Science*, 33(1), pp.43–82.

Swain, J. (2018). A hybrid approach to thematic analysis in qualitative research: Using a practical example. *Sage research methods*, 2018.

Symeonides, R. and Childs, C. (2015). The personal experience of online learning: An interpretative phenomenological analysis. *Computers in Human Behavior*, 51, pp.539–545.

Talking Heads and Brian Eno. (1981). *Once In A Lifetime*. Sire Records.

Tennant, J.P., Waldner, F., Jacques, D.C., Masuzzo, P., Collister, L.B. and Hartgerink, C.H.J. (2016). The academic, economic and societal impacts of Open Access: An evidence-based review. *F1000Research*, 5, p.632.

Teo, T., Lee, C.B. and Chai, C.S. (2008). Understanding pre-service teachers' computer attitudes: applying and extending the technology acceptance model. *Journal of Computer Assisted Learning*, 24(2), pp.128–143.

Tettegah, S.Y. and McCreery, M.P. (2015). *Emotions, Technology, and Learning*. Elsevier Science & Technology.

Thomas, D.R. (2006). A General Inductive Approach for Analyzing Qualitative Evaluation Data. *American Journal of Evaluation*, 27(2), pp.237–246.

Thomas, M. (2011). Technology, education, and the discourse of the digital native. *Deconstructing digital natives: Young people, technology, and the new literacies*, 2011, pp.1–11.

Thomas, M.K. and Yang, W.-L. (2013). Neoliberalism, globalization, and creative educational destruction in Taiwan. *Educational Technology Research and Development*, 61(1), pp.107–129.

Thomson, P. (2012). Field. In: Grenfell, M., ed. *Pierre Bourdieu: Key Concepts*. 2nd ed. Acumen Publishing, pp.65–80.

Tight, M. (2010). Are Academic Workloads Increasing? The Post-War Survey Evidence in the UK. *Higher education quarterly*, 64(2), pp.200–215.

Tondeur, J., van Braak, J., Ertmer, P.A. and Ottenbreit-Leftwich, A. (2017). Understanding the relationship between teachers' pedagogical beliefs and technology use in education: a systematic review of qualitative evidence. *Educational Technology Research and Development*, 65(3), pp.555–575.

Torrisi, G. and Davis, G. (2000). Online learning as a catalyst for reshaping practice–the experiences of some academics developing online learning materials. *International Journal for Academic Development*, 5(2), pp.166–176.

Torrisi-Steele, G. and Drew, S. (2013). The literature landscape of blended learning in higher education: The need for better understanding of academic blended practice. *International Journal for Academic Development*, 18(4), pp.371–383.

Trigwell, K. and Prosser, M. (1996). Changing approaches to teaching: A relational perspective. *Studies in higher education*, 21(3), pp.275–284.

Trowler, P. (2001). Captured by the Discourse? The Socially Constitutive Power of New Higher Education Discourse in the UK. *Organization*, 8(2), pp.183–201.

Trowler, P., Saunders, M. and Bamber, V. (2012). *Tribes and territories in the 21st century: Rethinking the significance of disciplines in higher education*. Routledge.

TU4Dublin. (2018). TU4Dublin. Application for designation as a technological university. , 27 April 2018. Available from: https://hea.ie/assets/uploads/2018/09/2.-TU4Dublin-TU-Application.pdf [accessed 20 June 2019].

Tynan, B., Ryan, Y. and Lamont-Mills, A. (2015). Examining workload models in online and blended teaching. *British Journal of Educational Technology*, 46(1), pp.5–15.

Vaidhyanathan, S. (2012). *The Googlization of everything:(and why we should worry)*. Univ of California Press.

Vanderlinde, R. and van Braak, J. (2010). The gap between educational research and practice: Views of teachers, school leaders, intermediaries and researchers. *British educational research journal*, 36(2), pp.299–316.

VanLeeuwen, C.A., Veletsianos, G., Johnson, N. and Belikov, O. (2021). Never-ending repetitiveness, sadness, loss, and "juggling with a blindfold on:" Lived experiences of Canadian college and university faculty members during the COVID-19 pandemic. *British Journal of Educational Technology*, 2021.

Veletsianos, G. and Moe, R. (2017). The rise of educational technology as a sociocultural and ideological phenomenon. *Educause Review*, 2017.

Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information systems research*, 11(4), pp.342–365.

Venkatesh, V. and Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision sciences*, 39(2), pp.273–315.

Venkatesh, V. and Davis, F.D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, 46(2), pp.186–204.

Verbert, K.K., Duval, E., Klerkx, J., Govaerts, S. and Santos, J. (2013). Learning analytics dashboard applications. *American Behavioral Scientist*, 57(10), pp.1500–1509.

Verger, A., Steiner-Khamsi, G. and Lubienski, C. (2017). The emerging global education industry: analysing market-making in education through market sociology. *Globalisation, Societies and Education*, 15(3), pp.325–340.

Voogt, J., Fisser, P., Pareja Roblin, N.N., Tondeur, J. and van Braak, J. (2013). Technological Pedagogical Content Knowledge - a review of the literature. *Journal of computer assisted learning*, 29(2), pp.109–121.

Vygotskiĭ, L.S. (1978). *Mind in society: the development of higher psychological processes*. Harvard University Press.

Wacquant, L. (1989). Towards a Reflexive Sociology: A Workshop with Pierre Bourdieu. *Sociological theory*, 7(1), pp.26–63.

Wacquant, L. (1998). Pierre Bourdieu. In: *Key sociological thinkers*. Springer, pp.215–229.

Wacquant, L.J. (1990). Sociology as Socioanalysis: Tales of 'Homo Academicus' [By Pierre Bourdieu]. In: Sociological Forum. JSTOR, pp.677–689.

Wajcman, J. and MacKenzie, D.A. (1988). *The social shaping of technology: How the refrigerator got its hum*. Open University Press.

Walker, R., Voce, J., Jenkins, M., Strawbridge, F., Barrand, M., Hollinshead, L., Craik, A., Latif, F., Sherman, S., Brown, V. and Smith, N. (2018). *2018 Survey of Technology Enhanced Learning for Higher Education in the UK.*

Walsh, J. (2018). *Higher Education in Ireland, 1922–2016: Politics, Policy and Power—A History of Higher Education in the Irish State*. Springer.

Walsh, J. and Loxley, A. (2015). The Hunt Report and higher education policy in the Republic of Ireland: 'an international solution to an Irish problem?' *Studies in Higher Education*, 40(6), pp.1128–1145.

Waterford Institute of Technology. (2018). *Strategic Plan 2018 to 2021 | Waterford Institute of Technology* [online]. Waterford Institute of Technology. Available from: https://www.wit.ie/about_wit/at_a_glance/strategic-plan-2018-to-2021 [accessed 15 November 2018].

Watermeyer, R., Shankar, K., Crick, T., Knight, C., McGaughey, F., Hardman, J., Suri, V.R., Chung, R. and Phelan, D. (2021). 'Pandemia': a reckoning of UK universities' corporate response to COVID-19 and its academic fallout. *British Journal of Sociology of Education*, 2021, pp.1–16.

Watson, D.M. (2001). Pedagogy before technology: Re-thinking the relationship between ICT and teaching. *Education and Information technologies*, 6(4), pp.251–266.

Watty, K., McKay, J. and Ngo, L. (2016). Innovators or inhibitors? Accounting faculty resistance to new educational technologies in higher education. *Journal of Accounting Education*, 36(Journal Article), pp.1–15.

Webb, J., Schirato, T. and Danaher, G. (2010). *Understanding Bourdieu*. 1st ed. SAGE.

Webb, M. and Cox, M. (2004). A review of pedagogy related to information and communications technology. *Technology, pedagogy and education*, 13(3), pp.235–286.

Weil, M.M. and Rosen, L.D. (1997). *TechnoStress: Coping with Technology @Work @Home @Play*.

Weller, M. (2011). *The digital scholar: How technology is transforming scholarly practice*. A&C Black.

Weller, M., Jordan, K., DeVries, I. and Rolfe, V. (2018). Mapping the open education landscape: Citation network analysis of historical open and distance education research. *Open Praxis*, 10(2), pp.109–126.

Welsh, E. (2002). Dealing with data: Using NVivo in the qualitative data analysis process. *Forum Qualitative Sozialforschung*, 3(2).

Wenger, E., Brown, J.S., Heath, C. and Pea, R. (1999). *Communities of Practice: Learning, Meaning, and Identity*. Cambridge University Press.

Westberry, N., McNaughton, S., Billot, J. and Gaeta, H. (2015). Resituation or resistance? Higher education teachers' adaptations to technological change. *Technology, pedagogy and education*, 24(1), pp.101–116.

Westera, W. (2004). On strategies of educational innovation: Between substitution and transformation. *Higher Education*, 47(4), pp.501–517.

Whitworth, A. (2005). The politics of virtual learning environments: environmental change, conflict, and e-learning. *British Journal of Educational Technology*, 36(4), pp.685–691.

Whitworth, D.E. and Wright, K. (2015). Online assessment of learning and engagement in university laboratory practicals. *British Journal of Educational Technology*, 46(6), pp.1201–1213.

Wiles, R., Crow, G., Heath, S. and Charles, V. (2008). The management of confidentiality and anonymity in social research. *International Journal of Social Research Methodology*, 11(5), pp.417–428.

Williams, R. and Edge, D. (1996). The social shaping of technology. *Research Policy*, 25(6), pp.865–899.

Williamson, B. (2019a). Policy networks, performance metrics and platform markets: Charting the expanding data infrastructure of higher education. *British Journal of Educational Technology*, 50(6), pp.2794–2809.

Williamson, B. (2019b). New power networks in educational technology. *Learning, Media and Technology*, 44(4), pp.395–398.

Williamson, B. (2020). Making markets through digital platforms: Pearson, edu-business, and the (e) valuation of higher education. *Critical Studies in Education*, 2020, pp.1–17.

Williamson, B. (2021a). Meta-edtech. , 2021.

Williamson, B. (2021b). Education Technology Seizes a Pandemic Opening. *Current History*, 120(822), pp.15–20.

Williamson, B., Bayne, S. and Shay, S. (2020). The datafication of teaching in Higher Education: critical issues and perspectives. , 2020.

Williamson, B. and Hogan, A. (2021). Pandemic Privatisation in Higher Education: Edtech & University Reform. , 2021.

Willmott, H. (1995). Managing the academics: Commodification and control in the development of university education in the UK. *Human relations*, 48(9), pp.993–1027.

Winter, R. (2009). Academic manager or managed academic? Academic identity schisms in higher education. *Journal of higher education policy and management*, 31(2), pp.121–131.

Winter, R.P. and O'Donohue, W. (2012). Academic identity tensions in the public university: which values really matter?. *Journal of Higher Education Policy and Management*, 34(6), pp.565–573.

Woodcock, J. (2018). Digital labour in the university: Understanding the transformations of academic work in the UK. *tripleC: Communication, Capitalism & Critique. Open Access Journal for a Global Sustainable Information Society*, 16(1), pp.129–142.

Wright, K.B., Abendschein, B., Wombacher, K., O'Connor, M., Hoffman, M., Dempsey, M., Krull, C., Dewes, A. and Shelton, A. (2014). Work-related communication technology use outside of regular work hours and work life conflict: The influence of communication technologies on perceived work life conflict, burnout, job satisfaction, and turnover intentions. *Management Communication Quarterly*, 28(4), pp.507–530.

Wright, S. and Parchoma, G. (2011). Technologies for learning? An actor-network theory critique of 'affordances' in research on mobile learning. *Research in Learning Technology*, 19(3).

Wu, H.-K., Lee, S.W.-Y., Chang, H.-Y. and Liang, J.-C. (2013). Current status, opportunities and challenges of augmented reality in education. *Computers & Education*, 62(Journal Article), pp.41–49.

Wyatt, S. (2008). Technological determinism is dead; Long live technological determinism. In: *Handbook of science and technology studies*. MIT press.

Wyatt-Smith, C., Lingard, B. and Heck, E. (2021). *Digital Disruption in Teaching and Testing: Assessments, Big Data, and the Transformation of Schooling*. Routledge.

Yazan, B. (2015). Three approaches to case study methods in education: Yin, Merriam, and Stake. *The Qualitative Report*, 20(2), pp.134–152.

Yin, R.K. (2009). *Case study research: design and methods*. 4th ed. Sage Publications.

Yin, R.K. (2011). *Qualitative research from start to finish.* 2nd ed. Guilford Press.

Ylijoki, O.-H. and Ursin, J. (2013). The construction of academic identity in the changes of Finnish higher education. *Studies in Higher Education: The purposes of higher education: responses from a globalized world*, 38(8), pp.1135–1149.

Young, M. (1984). Information Technology and the Sociology of Education: Some Preliminary Thoughts. *British Journal of Sociology of Education*, 5(2), pp.205–210.

Young, M.F., Slota, S., Cutter, A.B., Jalette, G., Mullin, G., Lai, B., Simeoni, Z., Tran, M. and Yukhymenko, M. (2012). Our Princess Is in Another Castle: A Review of Trends in Serious Gaming for Education. *Review of Educational Research*, 82(1), pp.61–89.

Zembylas, M. (2008). Adult learners' emotions in online learning. *Distance education*, 29(1), pp.71–87.

Zemsky, R. and Massy, W.F. (2004). *Thwarted Innovation. What Happened to e-learning and Why*. The Learning Alliance.

Zhang, Q. and Zhu, W. (2008). Exploring emotion in teaching: Emotional labor, burnout, and satisfaction in Chinese higher education. *Communication Education*, 57(1), pp.105–122.

Zhang, W., Wang, Y., Yang, L. and Wang, C. (2020). Suspending Classes Without Stopping Learning: China's Education Emergency Management Policy in the COVID-19 Outbreak. *Journal of Risk and Financial Management*, 13(3), p.55.

Zhu, C. (2015). Organisational culture and technology-enhanced innovation in higher education. *Technology, Pedagogy and Education*, 24(1), pp.65–79.

Zhu, C. and Engels, N. (2014). Organizational culture and instructional innovations in higher education: Perceptions and reactions of teachers and students. *Educational Management Administration & Leadership*, 42(1), pp.136–158.

Appendix A – Information Sheet

Participant Information Sheet

Study Title

Hyperbole, Hysteresis or Hope? A Critical Examination of the Effects of Learning Technology on the Identity and Practice of Academics

Researcher	Supervisor
Daniel McSweeney, Department of Adult and Community Education, Maynooth University, Co. Kildare. Email: Daniel.mcsweeney.2017@mumail.ie	Dr. Michael Murray, Maynooth University Department of Adult and Community Education. Email: Michael.J.Murray@mu.ie

Background to the study

I am currently engaged in doctoral studies in the Department of Adult and Community Education at Maynooth University. As part of my studies, I am planning on conducting research with a group of academics from the Institute of Technology Blanchardstown. I am hoping that you will agree to be a part of this study and I would like to take this opportunity to explain my research to you and answer any questions which may arise. Before you agree to take part in this study, it is important that you understand the research and what is involved for you. Please take the time to carefully read this document and do contact me for clarifications should any questions arise.

What is the research about?

As you may know, my previous work within the institute focused on the introduction of learning technology to our curricula, including our full time and part time programmes. For many years, supported by the messages contained within national and sectoral policy, I supported the widespread adoption of learning technology by academics across our institute. In recent times I have begun to question the content of some of these policies and the logic which has driven technology to the heart of our higher education environment. Through a form of critical and reflective research, I am hoping to explore a number of important issues, namely:

1. What effect, if any, does technology have on academic practice and identity in Irish higher education?
2. How do academics influence the adoption and use of learning technology?
3. What are the internal and external influences which impact on our use of technology?
4. What critiques do we have of our use of learning technology?

What is involved for participants?
If you agree to take part in the study, you will be asked to participate in an interview and a focus group to take place in a mutually agreed upon location. With your permission, interviews and focus groups will be recorded on an audio device and later transcribed for analysis. I will send you a copy of these transcript(s) to allow you an opportunity to confirm the accuracy of our conversations and to add or clarify any points as you see fit.

Is this voluntary?
Absolutely. Participation in this study is 100% voluntary and participants may withdraw from the study at any juncture without adverse consequences.

Will my data be protected?
Yes. All information provided is anonymised. Your name or details will not be published in this study. With your permission, anonymised direct quotes may appear and action will be taken to ensure that you cannot be identified though these quotes or other contributions.

The thesis may be publicly available in the future and parts of it may be published in research journals and/or presented at conferences. No identifiable markers will be published.

Data will be stored in a secure and safe manner in line with Maynooth University guidelines and general GDPR principles. Data will be deleted after 10 years.

It must be recognized that, in some circumstances, confidentiality of research data and records may be overridden by courts in the event of litigation or in the course of investigation by lawful authority. In such circumstances the University will take all reasonable steps within law to ensure that confidentiality is maintained to the greatest possible extent.

Is this study ethical?
Yes. This study has been granted ethical approval by the Social Research Ethics Sub-Committee (SRESC) at Maynooth University.

Further queries?
Please take your time to think about your participation. If you require further information on this study, please contact Daniel McSweeney using the contact details which can be found on the first page of this handout. If you agree to take part in the study, please sign the consent form attached to this document.

If during your participation in this study you feel the information and guidelines that you were given have been neglected or disregarded in any way, or if you are unhappy about the process, please contact the Secretary of the Maynooth University Ethics Committee at research.ethics@mu.ie or +353 (0)1 708 6019. Please be assured that your concerns will be dealt with in a sensitive manner

Appendix B – Consent Form

Participant Consent Form

Study Title

Hyperbole, Hysteresis or Hope? A Critical Examination of the Effects of Learning Technology on the Identity and Practice of Academics

Please initial

1. I have read and understood the provided information sheet which provides a clear overview of this study and my participation in it.

2. I understand my role in the research and have had an opportunity to ask for clarifications and/or further information from the researcher.

3. My role in this research is voluntary. I understand that I will not be paid for my participation. I understand that even if I agree to participate in the research now, I may withdraw from it at any future point and will suffer no adverse consequences as a result of my withdrawal.

4. I understand that data gathered from me during this research study may form the basis of a written report and that my identity and confidentiality as a participant in this study will remain secure.

5. I understand that interviews and focus groups may be recorded on digital audio recording devices for the purposes of transcription and further analysis.

6. I agree that my anonymised data will be kept for future research purposes such as publications related to this study.

7. I have been given a copy of this consent form for my own records. ☐

My name (block capitals):

____

My Signature: ______________________________

Date: _________________

Researcher: _______________________________

Date: _________________

Researcher	**Supervisor**
Daniel McSweeney, Department of Adult and Community Education, Maynooth University, Co. Kildare.	Dr. Michael Murray, Maynooth University Department of Adult and Community Education.
Email: Daniel.mcsweeney.2017@mumail.ie	Email: Michael.J.Murray@mu.ie

If during your participation in this study you feel the information and guidelines that you were given have been neglected or disregarded in any way, or if you are unhappy about the process, please contact the Secretary of the Maynooth University Ethics Committee at research.ethics@mu.ie or +353 (0)1 708 6019. Please be assured that your concerns will be dealt with in a sensitive manner

Appendix C – Interview protocol

TOPIC 1: GENERAL EXPERIENCE OF TECHNOLOGY

Tell me about you and technology	
Is technology something that comes naturally to you?	
How do you feel about the notion of digital natives? Are the younger generation better equipped to deal with technology?	
Do you keep up with technology trends or is it moving too fast?	
Can you live without technology?	

TOPIC 2: LIVED EXPERIENCE OF EDUCATIONAL TECHNOLOGY

Tell me about you and educational technology?	
How do **you** feel about educational technology?	
Why do **you** use it? (you in particular)	
Have **you** had good/bad experiences with educational technology?	
What would **you** do if technology disappeared?	

TOPIC 3: INDIVIDUAL EXPERIENCE AND INDIVIDUAL PRACTICE

Has technology changed your practice?	
Has it changed the way you teach?	
Has it changed other elements of your practice? (research, communication etc)	
Is its presence enhancing your educational environments?	
Does it change academic practice in the wider sense?	
Does it modernise teaching?	
Is it in the interest of academics to use or be seen to use technology?	

TOPIC 4: WHY TECHNOLOGY (Beliefs)

Why do higher education institutes make use of technology	
What are the internal drivers for its use	
What are the external drivers for its use	
What does policy say about learning technology	

What does research say about learning	
What are the benefits for academics?	
What are the benefits for students?	
What are the benefits for the institution?	
Is our use of technology linked to the knowledge economy?	

TOPIC 5: POWER AND POLITICS

Do you think that there are politics involved in the use of learning technology?	
Who has power in relation to technology	
How does technology relate to debates about globalisation / marketisation of HE?	
Is there any resistance to the use of technology in HE? Why?	
What would happen if an academic in this institution resisted the usage of technology	
Recent job applications for internal promotion in the institute listed learning technology use as an indicator of innovation. What do you think about that?	
Have you seen misuse of technology in higher education?	
Is the use of technology democratic? Is it fair?	
Do you have any fears about technology	
Do you have any hopes for it?	

TOPIC 6: ENDING

We've covered a lot! Is there anything else around technology in higher education that you think we should discuss? Have we missed anything? Recommend anybody?

Appendix D – Initial notes on transcripts – samples

The following document contains notes taken during the familiarisation phase of the data analysis process. This sample contains notes taken for three participants.

TOPIC 1: GENERAL EXPERIENCE OF TECHNOLOGY

Fiona

- Does not class herself as a digital native
- Does not feel pressured to be ahead of the curve
- Does feel more pressure to be connected to the institute through technology (smartphone). Has the agency to remove this from her device but does not.
- Does pay attention to technology as she has children
- Allows husband to take on technical duties / admin at home. Why?
- Does love elements of technology e.g. airport parking, halo etc.

Audrey

- Aware of technology but mainly limited to skype etc for communication
- Notes the use of personas that people adopt when communicating via technology
- Very communication focused
- Acknowledges the digital divide but in that technology is normal everyday life for kids and the young
- Concern about incoming students "I look at some of the skills of our students coming in, and I wonder how they ever managed to get through an English and basic kind of ... What I would consider foundations of education are kind of being lost"
- Suggests that tech may have gone too far "I've come across students in here who don't know how to use the library". Is there a concern being expressed here about digital natives and an over reliance on technology?

Donal

- Describes himself as good with technology because he uses it in education which feeds back into personal life
- Comfy with software and hardware.
- His changing beliefs about teaching have driven his technology skillset.

- Appears to be a technology enthusiast, likes to ‘tinker’ with tech.

TOPIC 2: LIVED EXPERIENCE OF EDUCATIONAL TECHNOLOGY

Fiona

- Suggests that there is a cultural pressure to use technology e.g. “I think from a work context it would be embarrassing to say that you don't use Moodle”. Why is this? Where does this perception emanate from (management, peers or students?)
- Very limited user of technology “the two big things I would use would be Moodle and email”
- Comments on the use of doodle. The public nature of listing the times that you are available for a meeting. Gives a good example of feeling pressured to take a meeting from 6-7 outside of work hours because over a third of the visible responses indicated that it suited. The exteriorisation effect here applied a form of pressure.
- Feels that educational technology makes you more available, blurring the boundaries between work and home. Does technology connect us to the institute?
- Students expecting answers to emails over the weekend. Would this happen in the absence of technology.
- Uses Moodle but feels benefit is to the students rather than her! Why is this?
- Feels that email is now a problem for her, doubling number of emails since she started lecturing. What has she done about this though? There is an air of defeat here.
- Rates herself as mid-range for technology use on comparison to peers.
- Is aware of peer activity “So people use an Event Brite or Doodle Polls, or Adobe Connect, or Google Docs, or ... I don't do any of that. I probably should be doing a bit of it”. Is image an issue here? Why should she be using this?
- Rationale for use of technology includes “the best reasons for me. For, for instruction. As an educator”

Audrey

- Uses moodle as her main form of technology
- Laments the use of PowerPoint and if effect on students
- Notes that students in the past where more active and engaged. Acknowledges the faults in her approach of using PowerPoint.
- Notes the lack of training “there's no training for people in here”
- Comments that all the institutions are the same. She has worked in several and has relatives with similar opinions

- Critical of some approaches to online learning e.g. “to me, online ... Online classroom, PowerPoint presentation over Adobe Connect? That's not online learning”. Demonstrates a critical perspective
- Critical of the lack of strategy “"Where's the strategy? Where's the recognition for the time this is going to take to produce?" And there is no recognition. People are told, "You're taking a course online." What are you to do? You haven't got any training, you took no ... What's good? There's no strategy, there's no overall picture in ITB, as to what's good”. Has she contributed to this? What role is the academy playing / or not playing here. Are we waiting for a strategy from above?

Donal

- questioned the value of standing up for 45 minutes, or 50 minutes, and talking to a group of students. Reflective on pedagogy and own development.
- Believes in technology enhanced interactive teaching “I utterly and totally believe in interactive teaching”
- Produces a lot of video content for students.
- Has experimented with lots of different learning technologies
- Experimented with blended learning and found out that students still craved peer interaction
- His blended learning experiments were not always successful “I found a lot, even at fourth year honours degree level, a lot of them had major difficulty with actually trying to self-learn.”
- Is an advocate for the use of technology in education “I think it's fantastic, yeah. But I think the use of technology is something that we should be doing ... I think it should be a strategic objective the college, in all colleges, that students coming in from year one should be exposed to the use of teaching using technology like that. So that builds them up so that, by the time they get to year four, they're self-reliant.”
- Failed in an experiment with technology but has not shared the results / learnings widely. Why? Also experiments seem to be in isolation of literature. Sense of logic being applied.

TOPIC 3: INDIVIDUAL EXPERIENCE AND INDIVIDUAL PRACTICE

Fiona

- Shows some concern regarding the opinions of others “I think if you're not using it- You look like a bit of a, a bit washed. I just don't think it looks good”. Technology and image are linked.

- Links the use of technology to progression and standing in the organisation “Yeah, I think if you were going in for an interview or a promotion and you were asked about Moodle and you said you didn't use it, I don't think that would help your career progression at all”
- No evidence that the technology has transformed practice. Acknowledges efficiency but would revert to acetates and group discussions.
- Has it changed the way she teaches? No. “Not radically, maybe incrementally”. No transformative effect.
- Time is a factor in her technology adoption “It's a fight carving out the time for training- Or getting someone to organise the training, or here's how you can make Moodle ... well no, Moodle there's plenty of training, here's how you can make Google Docs work better for you. Um, it's carving out the time for that, I think.”
- Was told to get on twitter! “Yeah. I mean it was said to me in here, um, that you know, you should get yourself on Twitter. I suppose I'm not fully convinced of, I find it's a very, it's a self-promotion tool.” “You need to get yourself on Twitter for career progression”
- Aware that she is being watched through twitter “There's 28 people watching them”
- Fiona is seeking to attract the positive attention of senior management through twitter “Yeah. So there I am, now I'm checking the Twitter feed and who liked it, and why did they like it, and- So I, and I'm not, I don't think that's, I don't think that's good for my health actually”
- Expresses a concern that she is not feeding twitter enough content to attract attention “But you have to feed it, like you have to feed it and I'm not sure”
- This has really opened up technology as a form of capital, reward through visibility.

Audrey

- Sees some advantages in terms of making materials available and monitoring students “Good about it is......pieces of classwork and things like that, the students can do it, they can upload it, and you've a great tracking mechanism for the ones who are doing some work.”
- Senses that it does effect student engagement “The negatives, I think, are that the lectures are available for the students, and they have them. And they don't have to come in to listen to what you have to say, and I think they need that added examples and added kind of stuff that you can't put into a presentation.”
- Concerned about ownership. “this new thing that's come in of people being under pressure to give other people their work annoys me” “And were given the, ‘you must hand over that,’ and were really put under pressure. And didn't want to, because it's their ... As far as I'm concerned, if I create stuff, it's mine.”

- Also raises concerns about academics avoiding work through technology, “in an awful lot of cases, one person's done all the work and the other people are just, "What are we doing this week?" Five minutes before they go in.” Does technology enable this?
- Critical of lack of training for academic staff “I think a huge number of people here in particular don't understand what the technology is about because there's no core training for them to know what it's about. So they pick up bits and pieces here and there, and they go to use something and then they're not using it correctly, if you know what I mean.”
- Critical of other staff approaches to pedagogy e.g. “… I mean okay, what they're taught to do is how to use Adobe Connect, which is only the tools, so to me that's like taking monkeys who climb rope, here's the tool, here's how you use the tool, this is the button you press, this is what you do. But online learning, to me, is not the same as classroom learning”
- Feels that technology is changing her practice! “Because we're no longer just standing up there pontificating”. She goes on to give an interesting example of how students are using technology in her module “But the students are then using that technology to see themselves presenting, to see what they've actually done. And to evaluate what they're doing. This is backed up, then, by a paper evaluation with the students, and to me, that's using technology. They're actually seeing how they look, how they're presenting, and 90% of them come out of that module as first-class presenters.”
- Audrey believes that the technology makes her experience and the experience of the students ‘more interesting’. But what does that mean? Is it better? Does it enhance learning/education.

Donal

- Has experienced failing technology (e.g. Adobe connect)
- Believes that technology has changed the way he approaches teaching “Utterly. Totally. When I started teaching 20 years ago, right, so I'd do the standard thing, come in and talk, you know….lecturing … I don't do that anymore”
- His changes in practice have been very gradual “Very gradual, over I'd say about the last 6, 7, 8, years, something like that, I can't even remember.”
- In general he finds that the college and the environment is very supportive of experimentation with technology “Nobody's ever said, "We don't want you using technology." Nobody's ever tried to influence in that way. It's very positive.”
- Support for the staff is an issue “There is, there's a huge problem with support for doing that, for the use of technology in learning here. There is no support. You do your own thing.”

- General frustration with the lack of strategic thinking “Zero support. Well, you can get training if you push for it, but you have to push for everything. But there's no strategic objective here about the use of technology in teaching and learning that I can see. And for business school, we had strategic sessions the year before last. I raised this, I said, "I thought there should be a strategic objective of the school, to teach the stuff, help produce material like this, as a strategic objective, that people would be at least at a minimum aware of what's possible, and embed it into their teaching and learning approaches. It just falls on deaf ears, you know.”
- Also notes the lack of innovation (and rationale for it) in terms of technology “some people have embraced technology and tried to use technology. Like {name removed} has tried to use videoconferencing and stuff like that, which seems has been pretty successful, that's something that I wouldn't mind trying myself, actually. But I don't see a lot of em, kind of innovation from younger lecturers, new people coming in, which is kind odd. They seem to be stuck in the lecture mode, you know, you give a lecture, you have a tutorial. I don't see an awful lot of innovation from those people, and I think it might be because.....changing your teaching style or your methods or your practises is not something that's kind of actively seen as an objective for people. There's no clearly defined support for people to embrace the use of technology.”
- Does not believe that wider teaching practice has changed “No! No, the institute has ... really very little has changed in terms of teaching practise. It would never change unless there was a strategic objective set which said, "We want to give 50% material, right, on the basis of blended learning, and we are going to do that."” But why would we do this? He does not believe that tech has changed practice yet admits that his us utterly transformed. Are we seeing across the other parts of the institute or guessing?

TOPIC 3: WHY TECHNOLOGY (Beliefs)

Fiona

- Believes that technology enhances learning but links its use to trends and perceptions “Yes, I think it does. Yeah, it makes materials more accessible, it, the, the profile of students that we're teaching expect it. They, they've grown up with these things. So I think it would look odd if we didn't have the latest and greatest.”
- Struggles to define benefits
- No evidence of knowledge or research

- Access is a major part of her thinking “Ease, ease of access, 24 hour access. Um, familiarity, because this is how they access material. Um, those kind of things”
- Links the designation of the college as a TU to the imperative of technology usage “I think reputationally that wouldn't be good. We're going on about, well it's in our title. We're move-, we're moving to a, a ti-, a new title with that in it. And we're, we're saying we have a fourth campus that's digital, so-……We need to walk the talk”

Audrey

- Exhibits little knowledge of policy or strategy documents
- Believes that management are concerned with the metrics and not the experience of staff or students “Well, they seem to be going very much for this digital campuses, and encourage all of this kind of thing to be brought in. And again, my view on it is I'm not sure they're looking at the view of the student or the academic from it, it's just, "Let's just save money here." If we can give a lecture out to 400 people, instead of having 20 people in a lab, that's not efficient. But that's education.”
- Again, expresses the view that the college is simply keeping pace with the world “I think because it's a thing that's out there, and they feel that we should be involved in this thing that's out there or we'll be left behind, if we're not involved in this thing. But I don't think any of them have a notion of what it's about.”
- Rationalisation is presented as a rationale “I suspect probably to save money, reduce the number of lecturers that they have to have”
- Suggests there is no policy on technology “I don't think we have a policy for technology. I think they're happy if people come up with things, like if you come up with something like this would be a good idea ... Like Moodle, for example. Right?”
- Critical of a lack of investment and buy in from management “But if you needed time for that, very loathe to give it. So they're very loathe to invest, but they're happy to go along with it because it's got the word technology attached to it. And that they feel good then, like we're on our way to a digital campus. I think we're so far away from being a digital campus, it's being ridiculous.”
- Optics and lip service: “Because if you're not prepared to invest in the people to produce the best quality, and give them the time and the resources to do so, then you're in a situation where it is optics. We're paying lip-service to it as opposed to ... Like what have we done about it?”
- Mentioned stakeholders such as government and students
- Digital campus is listed as a driver “And I think it's part of the technological university, they see it as being, "Well, we're the technological university, we've got to have lots of technology if we're a technological university." And that's the big driver of it, and how could

a technology university not have a digital campus on it? So we'll have a digital campus, but what we put in it, they're probably not too sure."

- Does not place any emphasis on the use of research in her decision making regarding the adoption or use of technology
- Optics are key for management in her view. "I don't think anything that's done here to enhance the student experience, even though we're supposed to be student-centric, is valued as much as, 'How do we look to the outside world?'"

Donal

- Believes that technology will change teaching in the wider sense "Well I think in 10 years' time, I'd be highly surprised if in 10 year's time, the mode of teaching and learning has not changed significantly to where I am. That's what I believe. I think that the idea of giving lectures will be completely outdated."
- His motivation for the use of technology is based on the benefit to students and his enjoyment "Well I enjoy using it, I enjoy developing my materials using different technologies. Maybe it's not for everybody. But the reason I do it is twofold, so the student can benefit and so I can enjoy it."
- Cost is listed as a factor in adoption "Cost savings tend to drive most of the stuff right, but I don't believe that using Adobe Connect to deliver your lecture instead of standing up in front of a group of students to deliver your lecture, that to me is not the use of technology in a good way."
- Flexibility is also a reason for its use "Well if they could see the possibilities of it in terms of providing flexibility to students, I think that should be the key driver, to allow them not to be shackled by the physical constraints of a building."
- "Anybody with half a brain can see that it's possible to deliver a really good education experience at third level without having to physically put them into rooms, you know?"
- When asked about policy "I quite honestly haven't clue."
- Does acknowledge that policy would help support his actions and beliefs "Not particularly but it'd give me a warm and fuzzy feeling if somebody's saying, "on a national level, we should be doing this," you know."
- Institute policy is unseen "I don't think there is any policy in the institute at all."
- Donal has looked at some research on learning technology "I haven't done a lot of research. I have looked at some research in relation to how students learn, and what the optimum time is particularly for video-based materials, and that's in around 46 minutes per chunk. Any more than that, you're wasting your time."

- Donal outlines his vision/strategy “If the Institute had strategic objectives, say we weren't going to be part of the TU and we were on our own to the future, to me the Institute's strategic objective should be to advertise this place as having the most flexible means of providing education to its students. If I were a student out there, I'd want, and a lot of them in our situation where they have to work, and I'd want to know, I'd say, "Jesus, you mean I can do stuff online if I want, and then I only have to come in on Saturdays or Sundays, once a month, for all the direct interaction with the lecturer?"”
- Resource optimisation is also given as a rationale “It's a much better use of resources, you can take on a lot more students. A lecturer can serve the huge amounts of students using that kind of technology, you know?”

TOPIC 4: POWER AND POLITICS

Fiona

- Describes a recent interview for promotion where she used technology as an attribute “I, well I know I would've talked about Moodle. Uh, bring your own, BYOD, bring your own device into the classroom, uh, digital literacy-”
- Technology is expected “Because I think that's expected, you know, and I'm comfortable with the level of technology that I use”
- Links the role of tech companies in promotion technology at 3rd level “maybe the tech companies that have devised the technologies and the software in the first place. Um............they're, they're definitely a driver”
- States that we use technology because of “Again, I think our name our title-Our mission, our strategy, it's in, it's in there isn't it? It's in, it's everywhere”
- Not sure if technology is in our policies or strategies
- Cost is listed as a rationale for usage
- Keeping up with the rest of the world “I think you look with it, I think you look, it's hip, it's en-vogue”
- Mentions competition from other 3rd level and technology being a factor
- In terms of government and EU policy, she places a degree of blind faith in its presence and message “I'm presuming they're there, it's not something that would hook me in. I just kinda would respond and do what I'm told in terms of that”
- There is again evidence of conflict “for me, it, I just need to manage it. I need to manage it. I think it's seeping into my working, my family life an awful lot more than I had envisioned”
- Fears that non-use of Technology would lead to the non-renewal of her contract “I don't think I'd get my post renewed. I....I don't think it

would be good for my social capital, my reputation". Odd to see somebody describe this in terms of social capital!

- Feels that resistance to technology is a negative "If I made a physical statement about resisting technology, I just don't think that would be...........that would be frowned upon"
- Winners and losers. Winners: "I think ITB, brand ITB wins, and I think I win". Losers: "Um, I think I lose as well"
- Critical of lack of investment in training and support "I, yeah, I suppose I think, you know, if we're going to embrace it we need to put resources into it and training into it"
- When asked about her contribution to technology in academic she feels that her voice has little value "No, I'm not competent enough to comment in a democratic process about, I feel."
- Complains about lack of investment in on campus technology.

Audrey

- I think a lot of the people who are at the helms are not necessarily that IT literate themselves, to one extent. I think there is a very ... I think there's a very big disconnect in this college between giving time to people to do things that are of value to the students, as opposed to giving people time that are of value to the establishment.
- Has a deep fear for the future of academia "I just have this difficulty that ... I've always had the fear of the virtual university. Right? In terms of I know places in America where the virtual university has just suddenly appeared, and then people are just ... paid to write the lectures, and nothing goes with it. And to me, that's not education. I think they're great, I think online courses are fantastic, I think to up your skills, they're fantastic. But it's not education, it's skill."
- Sees a difference between 'lecturing' management and 'non-lecturing' management. "I think the lecturing management appreciate what's happening, to a large extent. Those that are as technologically savvy as they need to be to understand what's involved in it."
- Suspicious of drivers "I think the other levels of management just see it as a way of reducing overheads"
- Fear of isolation and technology being a detriment to academic life "For me, the danger of this digital campus is that everybody's in little pods all on their own, with no proper communication between them."
- Also expresses a fear that students will lose value of peer learning because of the isolating nature of technology
- Feels that the academic overheads of managing technology are ignored by management "The academic overheads are being ignored. Anything that's done with technology takes a great deal of amount of time to set up."
- Fearful of jobs in a digital campus

- Cynical about completion rates and retention for online learning “I think there's a ... The percentage of students that actually finish online courses is tiny.”
- Sense of struggle against management “And you're working against management, who think you do nothing anyway.”
- Feels that new staff incoming to the institute are forced into the use of Moodle etc
- Technology gives a feeling of advancement “Because it will look like we're advancing because we're using technology”
- Believes that non-usage or resistance would be detrimental to an academic. “I think it would be very detrimental”.
- Management control: “They're kind of looking down on people who aren't using Moodle, without maybe even realising it's taking us ... Oh, you're not using technology. You're against what we want to do, as opposed to well, maybe it's just not suitable for what I'm doing.”
- Critical of management lack of engagement: “I think technology would be great there, but I don't think they're prepared here in a strategic way. I think they want to be seen to be embracing technology, but I don't think they want the overhead for people to be employed, or to be given hours, or to be given whatever, to give their skills to other lecturers”
- “And certainly none of the staff would know about it. And people, then, are just disillusioned here because they go to meetings about this and they come up with ideas, and get all fired up about it, and everything is great. And then nothing”
- Complains about lack of investment in on campus technology.
- Good ending quote “I think technology does enhance everything, but I think it's in danger of being the goal rather than the aid”

Donal

- Donal suggests that staff have been coerced into the use of some technologies “I have seen people being coerced into delivering materials via Adobe Connect” “"This is the online module, you have to deliver it via Adobe Connect." And they weren't comfortable with it.”
- Management played a role in the decision rather than the academics “"we have to have an online module. We have to have at least one online module, per semester. This is the one we're gonna do, and you have students."”
- In some ways the use of technology appears as a selling point for programmes, at validation and for marketing etc “Well that would've been probably course board decisions, or pressure coming outside for validation, you know, go through a validation, it sounds all nice and sexy, oh we're going to have at least one module delivered per semester in this programme to make it sound sexy. And then somebody's given it

and told, "Well, deliver it by Adobe Connect," without any real thought about how to use technology or what you're going to do with the technology or what delivering a module online means, or without designing the modules so that the students would get the material in a professional fashion and would be able to interact in a different way. It's just delivered.....say it online."

- Younger staff tend to be selected for online delivery because "'Cause they don't have the.....you know their contracts are crap. They don't have tenure, and they're afraid to say anything."
- Donal feels that management do not understand technology "No, absolutely not, that's my point. That's my point. Like I say, I put a sample of all the materials I think onto Moodle's site, and said, "Would you please review this, I think we need to look at this strategically, and we can get people doing different things." And nobody looked at it."

Appendix E - Data Analysis – Stage 2 – Open Coding

This appendix contains the initial open coding exercise carried out on the dataset which comprises of fifteen interviews. Braun and Clarke's thematic coding was adopted and a mix of latent and semantic coding is used. The initial open coding exercise generated 134 open codes which are refined in phase 3 of the coding process. Below you will see a list of codes, a brief description, the number of interviews in which the code was present (files) and the total number of quotes or references associated with each code.

Note: indented entries represent child nodes.

Name	Description	Files	References
Academic freedom	Impact of technology on academic freedom and agency etc.	6	6
Academic Persona and Image	How technology impacts on academic image and representation of self, both in the real and virtual spaces	11	35
Academic identity	issues around academic identity	1	1
Academic voice	Does technology impact on the voice of academics?	4	7
Accountability	responsibility through technology	1	1
Age profiles	Are age profiles a factor in our use, student use, response by management etc.	3	5
Agency	Academic agency and the impact of technology upon it	2	5
Belief - Change in mission values	Do we see the mission and nature of institutions changed via technology	1	1
Belief - Efficiency	Efficiency in terms of work practices, student workloads, admin etc.	3	4
Belief - Finance as a driver	Where cost is a factor in the adoption or use of technology	8	14
Belief - Policy and Strategy as a driver	The role of policy and strategy (local and beyond) in terms of assisting in the adoption of technology	3	5

Belief - Student numbers and metrics	How student numbers and other metrics are used to justify technology	2	4
Belief - Technological University	Does the presence of the new TU (due January 2019) impact on our thinking in relation to technology?	2	2
Belief - technology and competition	Competition from other HE's and organisations, both nationally and internationally.	8	13
Belief - Technology and image	Linking technology to image of the institution, the department, academic etc.	6	8
optics	A sense of how things look	1	1
Belief - Technology and modernity	Justification of technology through the argument that it is a sign and marker for modernity. A 'logical' inclusion in the curriculum.	14	38
Belief - Technology and the outside world	How the outside world shapes our thinking on technology	7	18
Belief - Technology benefit to academics	benefits in terms of practice, identity, work life balance, flexibility etc	10	23
Belief - Technology benefit to economy	is technology linked to the economy and how	7	16
Belief - Technology benefit to students	How does technology benefit the students	13	34
Benefits of technology	General benefits	2	6
Belief - Technology enhances learning	Does technology enhance the actual teaching and learning process	10	22
Belonging	A sense of belonging to the institute or part of it	1	4
Change	general sentiments of change	1	1
Changes in behaviour	Changes in behaviour from staff, students, stakeholders or the institute	3	3
Changes in practice	Changes in academic practice	15	87
Changes in roles	have our roles changed as academics?	2	2
Changes in the self	has technology had a deeper impact on the self?	4	15
Changes to the institute	Changes to the institute in terms of structure, mission, values, positioning etc.	5	7
Comfort zone	has technology disrupted?	1	4
Commodification of education	What is technology doing in terms of commodifying education?	2	2
Comparing self with peers	How do academics measure themselves in terms of technology adoption and usage. Comparing with	5	17

	peers would seem to be a logical yardstick.		
Comparing technology with face to face teaching	Comparing and contracting different modes of teaching etc	13	51
Conflict	Does technology cause conflict?	3	6
Connections through technology	What is technology doing to relationships in HE?	13	52
Critical perspectives - others	Adopting a critical stance towards the behaviour and work practices of others as it relates to technology	6	19
Critical perspectives - pedagogy	Adopting a critical perspective to pedagogy and curriculum design	12	44
Critical perspectives - technology	Adopting a critical perspective of technology	10	24
Culture	Within the institute, department, unit, academy and student body etc.	5	18
Democracy and control	What levels of control do the academy (and the students) have over technology	14	56
Digital campus	Does talk of the 'digital campus' influence our positioning in relation to technology	8	15
Digital Native - Views of the Self	How does the academic describe themselves in relation to 'digital natives'	9	30
Digital Natives - Views on students and others	How does the academic view their students in relation to 'digital natives'	14	67
Email	The impact of email	2	2
Emotional Impacts	Does technology affect academics on an emotional level?	6	30
Engagement	How does technology impact on student engagement	1	2
Enriching learning	Does technology improve or add something else to learning	1	3
Equality	Are there issues of quality and/or inequality	6	18
Ethics	Are there ethical concerns around technology	2	5
Experience and use of educational technology	What are the lived experiences of learning technology to date?	14	43
Experimentation and giving it a go	A sense that the academic is trying things out	2	3
Failure and frustration	Examples when things do not work, fail or cause negative feeling	13	56
Fear of technology	What is it about technology that we fear? How has this manifested?	11	42

Flexibility	Does technology create flexibility in terms of work practice, student engagement etc.	8	19
Flipped classroom	An example of a popular pedagogical change	3	7
Full time v part time	Comparing different student cohorts	1	1
Future	technology and the future....what does the future hold etc	7	13
GDPR and other rules	How aware are we of GDPR and other technology rules/standards	5	11
Google it	the use of a search engine by staff or students in the search for information	1	1
Higher Education	general issues around HE (systematic)	2	5
Immediacy	relationships and how technology impacts	2	3
Importance of technology	Points regarding the overall importance of technology	2	3
Independent learning	As it relates to students	4	5
Influences	What influences individuals to adopt technology	3	5
Internal driver	Internal drivers for adoption and use of technology	2	2
Interpersonal skills	IP skills of students as they are impacted by technology	3	8
Language of technology	How do we talk about technology	1	2
Learning as you go	Experimentation and discovery	10	33
Learning from peers	When academics learn from other academics	2	6
Learning technologists	Dedicated support staff for technology in educational environments	1	1
Lecturer profiles and backgrounds	Different lecturer characteristics	1	1
Logic of technology	Doxa, common sense etc.	1	2
Love and enjoyment	Instances where academics mention a love for technology or enjoyment of its use etc	7	12
Management and Technology	How do management relate to technology?	15	70
Measure impact	How do we know that technology works?	1	1
Neoliberalism	New management and market values being imposed on education via technology etc	1	4
Consumerism	Does technology encourage a consumerist approach to education	2	10

No need for technology	Sentiments of resistance, inappropriate examples of use etc.	3	6
Nobody at the wheel	Sentiments that those in charge are paying little attention to technology	3	3
Objectification of education	What does technology do to education and how the students view it. Is the lecturer now embodied by the digital representation of it e.g. the PDF or PPT file etc	7	27
Online teaching	Examples and stories of online teaching and experiences	2	10
Opportunity	Opportunities that technology affords the academic, student, institution etc	1	2
Over reliance on technology	Examples of where we have become too reliant on technology	1	3
Ownership of education	If technology given education a sense of tangibility, then who claims ownership of it, its assets, data etc.	5	11
Pace of change	How quickly is technology facilitating change.	1	1
Pedagogy	Examples of changes in pedagogy, both positive and negative	8	27
School as a driver for pedagogy	Where academics refer to schooling as a an influence	1	1
Playing the game	References to the game (Bourdieu)	1	1
Pockets of technology	Pockets of technology usage and adoption among academics, inside structures etc	1	1
Policy	Policy as it relates to technology	13	48
Politics of technology	Are there politics of technology in HE? Are academics aware? have they seen examples?	10	36
Power	Examples of power exercised through technology	8	20
Pressure to use technology	Exploring the pressures to adopt/use technology	10	39
Pressure from students	Pressure from student cohorts for the usage of technology	4	6
Privacy	Issues or concerns of privacy (academic, student etc)	2	3
Professionalism	Does technology impact on the sense of academic professionalism.	6	12
Competency		3	13
quality of materials	Concerns around the quality of digital materials produced through technology (by academics, the institution etc)	2	7

Recognition	recognition given to academics for the adoption and use of technology.	4	14
Reflexivity	Academics reflecting on their practice, career and the presence of technology (or lack of) in it	7	13
Relationships	How has technology impacted on relationships	9	45
Research	The role of academic research on the use of technology. Do academics heed published work in this area?	9	25
Resisting innovation	Challenges and resistance to technology driven change and innovation in HE (academics, students etc)	2	4
Resisting technology	resistance to technology by academics, students, stakeholders, the institute etc	14	56
Rewards	What do we gain from technology use	6	9
Self confidence	Does technology impact on academic self confidence	1	8
Self-reflection on general use of technology (outside Ed)	This topic seeks information on existing dispositions and examples of use of technology. Used to form some view of the habitus.	12	31
Needing others		5	7
Parenting and technology		3	5
Sense of things and hunches etc	Decisions and actions that are not necessarily underpinned by information, research, policy etc.	1	4
Sharing practice	Examples of academics sharing practice as it relates to technology	10	32
Smart phones and devices	Views and stories of devices that we see in HE (usage to include academic, student, management etc)	5	13
Social Media	The use of social media for teaching and other academic activity. Is it playing a role in how we work and communicate in HE?	13	90
Strategy	The relevance of strategy in relation to the adoption and use of learning technology in HE. Are academics aware of it?	6	25
Student Behaviour	How do students react to technology	10	42
Student experience	is the student experience altered by technology	4	15
Student profiles and cohorts	Differences in student cohorts etc.	4	7

Student Retention	Does technology impact on retention	3	5
Student Voice	Do students have a voice as it relates to technology	3	6
Support and training for students	How do we support students? Do we assume that they are digital natives and therefore can make use of these systems naturally?	3	3
Supporting academics	How do we support academic use of technology	14	81
Sustainability	Issues of sustainability and ecology e.g. carbon emissions	3	12
Technology and the discipline	What impact does technology (or the lack of) have on the discipline	4	11
The void	A metaphor for online teaching. An articulation of the sense of speaking into the emptiness of the virtual world	4	5
Throw away culture	Does modern throw away culture in part driven by expendable technology affect teaching and education	1	3
Time	issues of time and availability of time	12	46
Traditional media vs social media	contracting print with technology based social media	1	1
Union	union and other IR issues	3	5
Utilitarian perspectives	Technology as a tool	4	9
Visibility	Are the activities of the users of educational and learning technology made more visible through its use	13	44
Why use technology	reasons for the use of technology	8	21
Work practices	has technology impacted on the way we work?	6	15
Workload	What has technology done to academic workload?	5	20

Appendix F - Data Analysis – Stage 3 – Searching for Themes

This document contains the third stage of thematic analysis of the data set. Following on from the open coding exercise, this step attempts to organise and group themes in a manner that re-focuses the analysis at the broader level of themes, rather than codes.

During this stage, the initial 134 open codes where refined and organised into 16 nodes and 110 child nodes. The 16 nodes are highlighted in bold text.

Below you will see a list of nodes, a brief description, the number of interviews in which the code was present (files) and the total number of quotes or references associated with each code.

Name	Description	Files	References
Academic Agency	Issues of agency, freedom, the ability to act in the HE environment which has a technology presence.	15	168
Academic freedom	Impact of technology on academic freedom and agency etc.	9	15
Academic voice	Does technology impact on the voice of academics?	8	25
Reflexivity	Academics reflecting on their practice, career and the presence of technology (or lack of) in it	11	24
Supporting academics	How do we support academic use of technology	14	88
Academic Identity and Image	issues of academic identity and image as it is affected by technology.	15	248
Age profiles	Are age profiles a factor in our use, student use, response by management etc.	5	8
Comparing self with peers	How do academics measure themselves in terms of technology adoption and usage? Comparing with peers would seem to be a logical yardstick.	7	24
Digital Native - Views of the Self	How does the academic describe themselves in relation to 'digital natives'	9	37

Professionalism	Does technology impact on the sense of academic professionalism.	13	75
Quality of materials	Concerns around the quality of digital materials produced through technology (by academics, the institution etc.)	5	15
Self-Competency	Does technology impact on academic sense of competence	7	20
Self Confidence	Does technology impact on academic self confidence	6	20
Visibility	Are the activities of the users of educational and learning technology made more visible through its use	14	65
Change effects of technology	The changes and effects that are perceived to be driven by technology. Effects can relate to the individual academic, the institution or beyond.	15	425
Changes in the self	has technology had a deeper impact on the self?	6	20
Changes to the institute	Changes to the institute in terms of structure, mission, values, positioning etc.	6	8
Connections through technology	What is technology doing to relationships in HE?	13	73
Determinism	Deterministic nature or views of technology	5	5
Emotional Impacts	Does technology affect academics on an emotional level?	12	53
Love and enjoyment	Mentions of 'love' and 'enjoyment' in the articulation of rationale for the use of technology	7	12
Relationships	How has technology impacted on relationships	11	64
Belonging	A sense of belonging to the institute or part of it	1	3
Immediacy	relationships and how technology impacts	4	5
Work practices	has technology impacted on the way we work?	15	202
Changes in practice	Changes in academic practice	15	108
Changes in roles	have our roles changed as academics?	2	2
Time	issues of time and availability of time	12	40
Workload	What has technology done to academic workload?	8	30
Experiences of educational technology	The individual lived experiences and perspectives of technology e.g. critical	15	359

	perspectives, relationships, work practices etc.		
Critical perspectives - others	Adopting a critical stance towards the behaviour and work practices of others as it relates to technology	10	39
Critical perspectives - pedagogy	Adopting a critical perspective to pedagogy and curriculum design	12	44
Critical perspectives - technology	Adopting a critical perspective of technology	10	28
Failure and frustration	Examples when things do not work, fail or cause negative feeling	15	63
Smart phones and devices	Views and stories of devices that we see in HE (usage to include academic, student, management etc.)	5	15
Social Media	The use of social media for teaching and other academic activity. Is it playing a role in how we work and communicate in HE?	14	98
Technology and the discipline	What impact does technology (or the lack of) have on the discipline	6	22
Experiences of technology in general	The lived experience of technology beyond the bounds of educational technology. Attitudes and dispositions as they relate to wider technology in an attempt to gain some insight into the wider technology habitus.	14	61
Needing others	reliance on others for assistance in technology	5	7
Parenting and technology	how does technology impact on family life and parenting	3	4
Utilitarian perspectives	Technology as a tool	6	11
Fear and resistance to educational technology	Issues of fears and hesitations around the adoption and use of technology. Examples of resistance and consequences.	15	155
Ethical concerns	Are there ethical concerns around technology	2	5
Resisting technology	resistance to technology by academics, students, stakeholders, the institute etc.	14	60
Union	union and other IR issues	7	12
HE Management and Technology	HE management and their perceived place in relation to technology. How do academics view the role of management, what are their perceived motivations for use, how do they support staff etc.	15	98

Nobody at the wheel	Sentiments that those in charge are paying little attention to technology	6	7
Imperatives for the use of learning technology	The beliefs of academics as they relate to the imperatives for the usage of technology e.g. costs, markets, competition, modernity etc.	15	406
Belief - Benefit to academics	benefits in terms of practice, identity, work life balance, flexibility etc.	11	34
Belief - Benefit to students	How does technology benefit the students	13	57
Benefits of technology		2	6
Belief - Brand and Image	Does technology add to the brand and image of a HE institution.	7	13
optics		1	1
Belief - Cost	Where cost is a factor in the adoption or use of technology	9	17
Belief - Economy	is technology linked to the economy and how	8	18
Belief - Efficiency	Efficiency in terms of work practices, student workloads, admin etc.	7	17
Belief - Future	technology and the future....what does the future hold etc.	8	14
Belief - Modernity	Justification of technology through the argument that it is a sign and marker for modernity. A 'logical' inclusion in the curriculum.	14	49
Belief - Outside World	How the outside world shapes our thinking on technology	7	21
Belief - Policy and Strategy	The role of policy and strategy (local and beyond) in terms of assisting in the adoption of technology	5	7
Belief - Student numbers and metrics	How student numbers and other metrics are used to justify technology	3	5
Belief - Sustainability	Issues of sustainability and ecology e.g. carbon emissions	3	16
Throw away culture		1	3
Belief - Technological University	Does the presence of the new TU (due January 2019) impact on our thinking in relation to technology?	4	5
Belief - The market	technology and the HE marketplace	10	19
Belief -Enhances learning	Does technology improve or add something else to learning	12	30
Flexibility	Does technology create flexibility in terms of work practice, student engagement etc.	12	32

Importance of technology	Points regarding the overall importance of technology	2	3
Rewards	What do we gain from technology use	10	48
Recognition	recognition given to academics for the adoption and use of technology.	4	14
Learning about educational technology	How do academic learn about learning technology?	14	116
Experimentation and giving it a go	A sense that the academic is trying things out	5	14
From other examples of use	Learning from what others do outside of the institution	7	9
Learning as you go	Experimentation and discovery	11	40
Learning from peers	When academics learn from other academics	8	15
Sharing practice	How we communicate learnings	10	33
Neoliberalism and the market	New management and market values being imposed on education via technology etc.	12	96
Consumerism	Does technology encourage a consumerist approach to education	5	18
Objectification of education	What does technology do to education and how the students view it. Is the lecturer now embodied by the digital representation of it e.g. the PDF or PPT file etc.	11	45
Ownership of education	If technology given education a sense of tangibility, then who claims ownership of it, its assets, data etc.	5	14
Pedagogy	Issues of pedagogy and curriculum design in the face of technology and its influence	15	143
Comparing technology with face to face teaching	Comparing and contracting different modes of teaching etc.	14	63
Flipped classroom	An example of a popular pedagogical change	7	16
Online teaching	Examples and stories of online teaching and experiences	6	20
The void	A metaphor for online teaching. An articulation of the sense of speaking into the emptiness of the virtual world	4	7
School as a driver for pedagogy	Where academics refer to schooling as a an influence	2	2
Politics of technology	Issues of politics and power around technology. Democracy and control	15	204

	and the associated influence/voice of academics, students and stakeholders.		
Democracy and control	What levels of control do the academy (and the students) have over technology	14	71
Power	Examples of power exercised through technology	11	40
Pressure to use technology	Exploring the pressures to adopt/use technology	11	53
Pressure from students	Pressure from student cohorts for the usage of technology	5	12
Students and Learning Technology	The effects of technology on students. Student behaviours and attitudes. Changes to students as influenced by technology.	15	235
Digital Natives - Views on students and others	How does the academic view their students in relation to 'digital natives'	14	76
Interpersonal skills	IP skills of students as they are impacted by technology	4	11
Student Behaviour	How do students react to technology	11	60
Student experience	is the student experience altered by technology	12	41
Student profiles and cohorts	Differences in student cohorts etc.	9	28
Student Retention	Does technology impact on retention	3	6
Student Voice	Do students have a voice as it relates to technology	5	9
Support and training for students	How do we support students? Do we assume that they are digital natives and therefore can make use of these systems naturally?	2	2
The Institute	The influence of technology on the institute, its culture, structures, mission, values etc.	13	74
Culture	Within the institute, department, unit, academy and student body etc.	5	25
Digital campus	Does talk of the 'digital campus' influence our positioning in relation to technology	10	27
Equality	Are there issues of quality and/or inequality	8	22
The role of policy, strategy and research	How does policy, strategy and research impact on academic decision making and behaviour as it relates to learning technology.	15	143

GDPR and other rules	How aware are we of GDPR and other technology rules/standards	6	13
Policy	Policy as it relates to technology	14	61
Research	The role of academic research on the use of technology. Do academics heed published work in this area?	12	38
Strategy	The relevance of strategy in relation to the adoption and use of learning technology in HE. Are academics aware of it?	7	30
WOW Quotes	Quotes that have had an impact on me as I have read through the transcripts. These are included in the other nodes but are also recorded here.	15	81

Appendix F - Data Analysis – Stage 4 – Final Themes

This document contains the final stage of thematic analysis of the data set. Following on from the stage 3 coding exercise, this step attempts to finalise major themes.

During this stage, the 16 nodes and 110 child nodes where refined and organised into 5 major themes.

Below you will see a list of themes (bold), a brief description for themes, the number of interviews which relate to the theme (files) and the total number of quotes or references associated with each theme.

Name	Description	Files	References
Imperatives for the use of learning technology	**The beliefs of academics as they relate to the imperatives for the usage of technology e.g. costs, markets, competition, modernity etc.**	**15**	**416**
Benefits to academics		13	82
Rewards		10	48
Recognition		4	14
Learning		12	30
Modernity		14	66
Future		8	14
Importance of technology		2	3
Organisation		15	91
Brand and Image		7	15
optics		1	1
Cost		9	17
Efficiency		7	17
Flexibility		12	32
Student numbers and metrics		3	5
Outside World		15	67

Economy		8	18
Policy and Strategy		6	9
The market		10	19
Students Needs		13	63
Benefits of technology		2	6
Sustainability		3	16
Throw away culture		1	3
Technology and the Academic	**The academic and learning technology. Examining the lived experience of academics, attitudes and beliefs as they relate to technology and their roles, identities, work practices and cultures.**	**15**	**1404**
Academic Agency		15	168
Academic freedom		9	15
Academic voice		8	25
Reflexivity		11	24
Supporting academics		14	88
Academic Identity and Image		15	248
Age profiles		5	8
Comparing self with peers		7	24
Digital Native - Views of the Self		9	37
Professionalism		13	75
Quality of materials		5	15
Self-Competency		7	20
Self Confidence		6	20
Visibility		14	65
Academic Practice		15	202
Changes in practice		15	108
Changes in roles		2	2

Time		12	40
Workload		8	30
Changes in the self		6	20
Connections through technology		13	73
Emotional Impacts		12	53
Love and enjoyment		7	12
Experiences of technology in general		14	61
Needing others		5	7
Parenting and technology		3	4
Utilitarian perspectives		6	11
Learning about educational technology		14	116
Experimentation and giving it a go		5	14
From other examples of use		7	9
Learning as you go		11	40
Learning from peers		8	15
Sharing practice		10	33
Pedagogy		15	143
Comparing technology with face to face teaching		14	63
Flipped classroom		7	16
Online teaching		6	20
The void		4	7
School as a driver for pedagogy		2	2
Relationships		11	64
Belonging		1	3
Immediacy		4	5
Smart phones and devices		5	15

Social Media		14	98
Technology Policy and Strategy	How do academics view the place of policy, strategy and research on their decision making and behaviour as it relates to learning technology.	15	143
GDPR and other rules		6	13
Policy		14	61
Research		12	38
Strategy		7	30
Technology and the Institute	**The influence of technology on the institute, its culture, structures, mission, values etc. as perceived by the academy.**	**15**	**202**
Changes to the institute		6	8
Culture		5	25
Digital campus		10	27
Equality		8	22
Technology and Management	HE management and their perceived place in relation to technology. How do academics view the role of management, what are their perceived motivations for management promotion of technology, how do management support staff etc.	15	98
Nobody at the wheel		6	7
Technology and the discipline		6	22
Technology and the Student	**The effects of technology on students and their higher educational experience as viewed by the academy. Student behaviours and attitudes. Changes to students as influenced by technology.**	**15**	**235**
Digital Natives - Views on students and others		14	76
Interpersonal skills		4	11
Student Behaviour		11	60

Student experience		12	41
Student profiles and cohorts		9	28
Student Retention		3	6
Student Voice		5	9
Support and training for students		2	2
Technology as a site of struggle	**Issues of power, control, democracy, agency, voice, resistance and struggle. Examining the political nature of technology within HE**	**15**	**629**
Critical perspectives - others		10	39
Critical perspectives - pedagogy		12	44
Critical perspectives - technology		10	28
Failure and frustration		15	63
Fear and resistance to educational technology		15	155
Ethical concerns		2	5
Resisting technology		14	60
Union		7	12
Neoliberalism and the market	The role of the market and market values, new management perspectives and neoliberal influences on the adoption and proliferation of technology.	12	96
Consumerism		5	18
Objectification of education		11	45
Ownership of education		5	14
Politics of technology		15	204
Democracy and control		14	71
Power		11	40
Pressure to use technology		11	53

Pressure from students		5	12
WOW Quotes		15	83