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Perspectives on Digital Learning among Leaders of Learning and Teaching with Technology in Higher Education Institutions

Thesis presented by

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for the degree of

Doctor of Philosophy

University College Cork

School of Education

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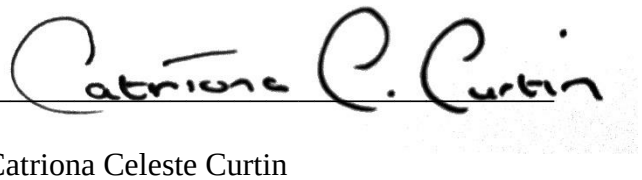
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Declaration

This is to certify that the work I am submitting is my own and has not been submitted for another degree, either at University College Cork or elsewhere. All external references and sources are clearly acknowledged and identified within the contents. I have read and understood the regulations of University College Cork concerning plagiarism.

Signed: 

Catriona Celeste Curtin

Student Number: 112222534

Abstract

Globally, HEIs are integrating virtual technologies often with a dual goal of improving efficiencies and enriching learning experiences. Yet, despite these aims, the latter has been less successful. Technology usage for pedagogy is commonly formative as opposed to transformative. While there are approaches to learning with technology that potentially effect meaningful learning experiences, pedagogy is complex. This complexity is further compounded when technology becomes part of the learning experience. For instance, how pedagogy in enacted within virtual environments can differ from face-to-face supported learning. There is a need for a faculty voice when it comes to learning with technology, particularly pedagogues experienced in digital learning. This empirical study, through a series of qualitative interviews, explores HE digital leaders, perspectives, experiences, and understandings of learning with technology. Four themes are identified as result of the data analysis. Firstly, learning with technology is naturalised into HE learning cultures. This renders the nomenclature of blended or digital learning outdated and inappropriate. Secondly, how technology is naturalised into HE cultures differs as it is shaped by distinct disciplinary cultures, and learners who differ in their respective needs. Thirdly, technology is an enabler of meaningful assessment as a form of learning, that is formative and dependent upon collaboration. Lastly, faculty development is critical to effective technology integration. This study contributes to the knowledge about technology-based learning in a number of ways. Findings show that technology and pedagogy need to be considered together and not as separate entities. Most significantly in this relationship between pedagogy and technology, findings foreground the importance of pedagogy and instrumentalise technology as a means to the core purpose, which is learning. Moreover, pedagogy and technology are dynamic as they are shaped by

people whose learning requirements differ. The research shows that all HE stakeholders need to recognise the connection between technology and pedagogy and adapt their practices to facilitate learning with technology. Taken together, these findings have important implications for practice and policy.

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I am indebted to University College Cork, its School of Education, College of Arts, Celtic Studies and Social Sciences, for awarding me an 'Arts Leading Learning' scholarship. This scholarship allowed me to research an area of critical importance and pursue a topic about which I am most passionate. Thank you, Professor Kathy Hall and Dr. Julia Walsh for affording me this opportunity.

I would like to offer my special thanks to the digital leaders whom I was most fortunate to interview for this study. The rich data the leaders provided helped me make this study a valuable contribution to the area of learning with technology.

Finally, yet importantly, I am grateful to my husband Fergal and my two children, all of whom accompanied me on this research journey. Fergal, your unconditional support enabled me to focus upon my research, and your unparalleled light-heartedness helped motivate me during times of challenge. My children, Colette and Frank, thank you for your laughter. Watching you grow and develop helped shift my assumptions surrounding the nature of learning.

Dedication

I dedicate my thesis to my parents, Patrick and Colette Curtin.
Thank you for your unyielding guidance and support throughout my lifetime.
You have provided me with a strong moral compass
which enables me to participate meaningfully in life.

'*This above all: to thine own self be true,*
And it must follow, as the night the day,
Thou canst not then be false to any man.'

Hamlet, William Shakespeare (2019,p.32)

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Acronyms and Abbreviations

AI	Artificial Intelligence
BL	Blended Learning
BYOD	Bring Your Own Device
CMS	Content Management System
CoI	Community of Inquiry
CoP	Community of Practice
CPD	Continuing Professional Development
CPPCK	Community Perspective Pedagogical Content Knowledge
CPTPACK	Community Perspective Technological Pedagogical Content Knowledge
DL	Digital Learning
EHEA	European Higher Education Area
eLearning	Electronic Learning
EU	European Union
HE	Higher Education
HEA	Higher Education Authority
HEI	Higher Education Institution
ICT	Information and Communication Technology
JITL	Just-In-Time Learning

LMS	Learning Management System
mLearning	Mobile Learning
MOOC	Massive Open Online Course
OCED	Organization for Economic Cooperation and Development
oCoP	Online Community of Practice
PBL	Problem Based Learning
PCK	Pedagogical Content Knowledge
PD	Professional Development
ROI	Return on Investment
SPOC	Small Private Online Course
TEL	Technology Enhanced Learning
TPACK	Technological Pedagogical Content Knowledge
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
VLE	Virtual Learning Environment

Chapter 1 Introduction to the Study

1.1 Background to the study

Assumptions on learning, and the nature of knowledge, attitudes and skills that learners require, have shifted to align with the needs of a society contingent upon the creation of new knowledge (OECD, 2019). The primary catalysts for these shifts include climatic change, technological innovation and globalisation which are rapidly shifting social, scientific, political, and economic landscapes, as addressed in chapter 2. Lifelong learning and new innovation and learning competencies are regarded as integral ingredients to tackling societal change and ensuring that learners succeed both professionally and as inclusive citizens (European Commission, 2018). With regards the latter, the learning abilities considered most pertinent to the 21st century include problem-solving, critical thinking, creativity, innovation, and collaboration (National Education Association, 2012; Scott, 2015). These skillsets are essential for economic and social wellness (Hoidn & Kärkkäinen, 2014). Moreover, they are integral components of what Kivunja (2014a, p. 85) terms "the new learning paradigm" across all educational sectors. It is the responsibility of HEIs to nurture learners' skillsets by integrating more active learning pedagogies and facilitate situated learning experiences that allow learners to connect their theoretical knowledge with practice (Hunt, 2011).

Despite demands for pedagogical adaptivity on the part of HEIs, a wide range of issues are constraining HEIs capabilities in fulfilling societal learning expectations. Massification of higher education has escalated the costs for HEIs worldwide (Altbach, Reisberg, & de Wit, 2017). HEIs have grown progressively reliant upon funding from external stakeholders due to economic exigency (Watts, 2016), and are

thereby accountable to them in their productivity (Barnett, 2012; Higher Education Authority, 2018; Salmi, 2008). At the same time, accompanying HE massification is the marketisation of HEIs (Molesworth, Nixon & Scullion, 2009). Substantially, the value of learning is defined by governments, learners and enterprise, who historically counted upon HEIs for guidance (Maassen & Stensaker, 2011). Significantly, the yardstick for quality education, from the standpoint of external stakeholders, is its translation into employment (Bendixen & Jacobsen, 2017). External stakeholders' perceptions of HEIs have become progressively narrow whereby HEIs are regarded as market entities (Barnett, 2013, p. 2). This vision privileges acquired knowledge over a learning process. For instance, Molesworth, Nixon and Scullion (2009, p.277) contend the HE marketisation hinders pedagogy by linking theory "to a critique of consumer culture". This connection denies learners' "'transformation'" into critically thinking scholars (Molesworth et al., 2009, p.277). Most significantly, as pointed to by Nixon (2008), contemporary visions of HE relative to academia and the common good of society are increasingly reducing in importance (Nixon, 2008).

The currency of a dynamic labour market is the innovative learning abilities of its workforce. Yet, governments and enterprise funding allocation favours research above teaching (Pleschova et al., 2012), when pedagogical practices play a leading role in cultivating learners' competencies (HEA, 2018). Likewise, interrelated with HE marketisation, global ranking systems of HEIs prioritise research whilst teaching excellence is overwhelmingly disregarded (Altbach, 2012). A privileging of research in university rankings has led to only a minority of EU countries strategically investing in HE learning and teaching (Vassiliou & McAleese, 2012). Moreover, HEIs themselves often give precedence to research to improve rankings so as to attract learners and academics, and for continued private and public funding (Hou & Jacob,

2017). For instance, faculty promotion and tenure is based primarily on research output, leaving some faculty reluctant to commit their time to teaching over research (Cummings & Shin, 2014).

Along with the massification of HEIs is an increase in learner diversity owing to widening participation agendas (Higher Education Authority, 2008, 2015). These include non-traditional mature learners, and individuals from lower socio-economic backgrounds (Hunt, 2011). Equally, the international student cohort has grown (West, 2018). Learning mobility internationally is driven by economic, demographic, technological and politic and/or technological shifts (West, 2018). Nonetheless, a key concern for HEIs is tailoring learning experiences to all learners' needs, particularly as attrition rates can be an issue amongst non-traditional learners (Hussey & Smith, 2010), along with first year learners (Wingate, 2007). Compounding this issue is the fact that contemporary learners in marketised HEIs view themselves as consumers of a product that is education, and assume the award of a HE qualification (Kanuka & Brooks, 2010). Furthermore, HEIs are expected to support the contextual needs of lifelong learners. This lies within a HE remit in supporting industry (Candy, 2000; McGee, 2017), and a requirement to fulfil government policy demands for flexible learning provision (Hunt, 2011).

There is an assumption amongst many HEIs that the traditional university model is incompatible with contemporary learning expectations, and instead that digital learning is a more appropriate response. HE leaders regard digital learning as a means of reducing costs, widening access through flexible learning provision, and creating effective learning experiences (Graham, Allen, & Ure, 2005; Vaughan, 2007). At a national level, digital strategy guiding HEIs can similarly depict digital learning as a marketing tool for HEIs that will simultaneously enhance learning, reduce costs

and improve efficiencies (Munro, 2018). Of particular interest to HEIs is digital learning that involves a virtual learning component. Blended learning degree provision involving a mix of virtual and face-to-face supported learning is favoured over entirely remote learning approaches by most European HEIs (Commission/EACEA/Eurydice, 2018; Gaebel, Zhang, Stoeber, & Morrisroe, 2021; Gaebel & Zhang, 2018). Furthermore, institutional level digital strategy has become a key feature in the majority of HEIs across the European Higher Education Area (EHEA) (Gaebel et al., 2021).

While stakeholders working within HEIs accept without dispute that digital learning is inevitable within HEIs, Selwyn (2011) also foregrounds an assumption amongst many HE stakeholders that digital learning facilitates more effective learning experiences than face-to-face. This perception may stem from the fact that virtual environments naturally facilitate learning experiences that mirror pedagogical practices crucial to the cultivation of learners' competencies. For instance, virtual technologies easily facilitate learners' active participation in online communities (Wenger, White, & Smith, 2009). What is more, is that the functionality of the virtual technology has the potential to achieve the liberal functions of HEIs. The learning personalisation that technology enables (Laurillard, 2007), coupled with learning flexibility that technology facilitates, potentially offers more equitable access to disadvantaged learners and learners with disabilities (Higher Education Authority, 2015).

Although many HEIs are strategically integrating digital learning to improve efficiencies and the efficacy of learning experiences, the latter has been less successful. In spite of a narrative that digital learning will alter a HE learning paradigm there is, as discussed by Selwyn (2013), a persistent chasm between educational

rhetoric concerning the way technology might be used and the manner it is integrated into practice. Technology is traditionally employed by faculty as a means of learning supplementation and improving efficiencies (Munro, 2018; Torrisi-Steele & Drew, 2013). A shortfall of pedagogically transformative learning experiences with technology is widely acknowledged across literature (Englund, Olofsson, & Price, 2017; Kirkwood & Price, 2014). On the other hand, digital learning has vastly improved surveillance of HE stakeholders (Selwyn, 2015). Moreover, financially constrained HEIs often view economical online learning models as a way of providing learner centred cost-effective teaching and learning (O'Flaherty & Phillips, 2015). Regardless, a failure amongst HEIs to support emergent learning processes in their usage of technology for pedagogy is likely to hinder the development of learners 21st century skillsets. This threatens learners' success professionally and as inclusive citizens, along with the welfare of a society that is reliant upon the development of new knowledge.

1.2 Rationale for the study

Arising from the literature review, several leading authors in the field of digital learning who centre upon pedagogy, believe that HEIs perspectives and priorities when it comes to digital learning, can overlook the complexities and nuances of a learning process. Whilst acknowledging the possibilities of digital learning, they problematise HEIs acceptance of digital learning as an inevitable means of supporting teaching and learning. For instance, Clegg, Hudson, and Steel (2003, p.39) argue that assumptions of inevitability have led to "technological determinism" and a "neo-liberal globalisation paradigm" within HEIs, that overlooks the historical and social

contexts that ought to shape learning. Selwyn (2011) suggests that a failure amongst HE stakeholders to query the nexus between technologies and education privileges technology use over pedagogy.

The dual agendas amongst HE leaders to improve efficiencies and enhance learning through digital learning integration, are also met with criticism by authors and some faculty working within HEIs. Researchers who critically appraise digital learning contend that a HE focus upon efficiencies, threatens the efficacy of learning experiences with technology. Tracing this conflict to a consumerist HE model, researchers argue that enriched learning experiences cannot be achieved simultaneously with HEIs aims for learning flexibility and cost reduction (Kanuka & Brook, 2010). Some researchers maintain that HEIs prioritisation of cost reduction and a framing of learners as consumers, oftentimes entrenches the nature of digital learning practice through top-down directives (McLean et al., 2019). Furthermore, whilst HE leaders support digital learning, faculty often question the efficacy of a digital learning approach and few HEIs have been successful at shifting this belief (Allen & Seaman, 2015).

Pragmatic and instrumental approaches to pedagogy often ensue from interlinked agendas of efficiencies and cost reduction. Nevertheless, research indicates that technology can be integrated in a manner that supports learning emergence. A small number of pedagogic models and frameworks have gained considerable recognition in educational literature and amongst HE faculty. Three prominent models/frameworks include a 'Community of Inquiry' (CoI), (Garrison, Anderson, & Archer, 2000), 'Technological, Pedagogical and Content Knowledge' (TPACK), (Koehler & Mishra, 2005), and 'Communities of Practice' (CoP) (Wenger, 1998). Notwithstanding their educational acclaim, there are conceptual or practical issues

relating to each of these models which are analysed in chapter two. Fundamentally, pedagogy is complex. This complexity is further compounded when technology becomes part of the learning experience. There is a need for a faculty voice when it comes to learning with technology.

Faculty are to date overlooked in digital learning research (Niemiec & Otte, 2009; Porter & Graham, 2016; Smith & Hill, 2018; Torrisi-Steele & Drew, 2013; Lupton, Mewburn, & Thomson, 2018). At the same time, over the past decade, only a limited number of studies explore issues at an institutional level to steer HEIs integrating virtual technologies (Graham, Woodfield, & Harrison, 2013; Mihai, Questier, & Zhu, 2021; Porter, Graham, Spring, & Welch, 2014) or research that centres upon leaders of digital learning whose positions are often in their infancy (Fredericksen, 2017). Furthermore, while pedagogy is complex, how education and technologies relate to one another is neglected by those in HE (Selwyn, 2011). There is requirement for scholarly research that critically appraises digital learning (Bulfin, Johnson, & Bigum, 2015; Selwyn, 2010; Selwyn, 2013). A disregard of pedagogy that shapes technology usage in research and HE discourse, as noted by Castañeda and Selwyn (2018, p. 3), "makes it difficult to robustly question (let alone change) the ways in which the technology is being used to support learning". This empirical study helps reduce these research gaps. It explores how technology and pedagogy relate to one another from the perspectives, experiences, and understandings of HE stakeholders.

1.3 Research Aim and Objectives

1.3.1 Research Aim

The overarching aim of the empirical study is to explore the perspectives, experiences, and understandings of HE stakeholders regarding learning with technology.

1.3.2 Research Objectives

- To explore the nature of the relationship between pedagogy and technology.
- To investigate how institutional cultures influence the pedagogical practices of faculty.
- To explore the relationship between disciplinary cultures and the conceptualisation of learning with technology.
- To investigate how the relationships between stakeholders within and beyond HEIs, influence learning with technology.

1.4 Thesis Design

The next chapter presents a literature review that is divided into six sections. The opening section (2.1) addresses the context of the contemporary university. The existential challenges of climate change, globalisation and technology that are shifting societal landscapes and assumptions on learning are discussed. The learning abilities considered most pertinent for the 21st century are also outlined. Section 2.2, centres upon the changing conceptions of learning in higher education. It addresses a need for HEIs to adapt pedagogical practices to closely align with the learning needs of society. The challenges HEIs internationally are experiencing are also explored. Section 2.3

discusses an assumption amongst HEIs that digital learning is an appropriate response to contemporary learning needs and challenges. It also notes the work of leading educational authors' who problematise an undisputed acceptance of digital learning by those in HE. Section 2.4 foregrounds a tension between HE leaders and faculty who question leaders' dual goals of efficiencies and learning efficacy. Section 2.5 identifies and discusses three meaningful pedagogic models/ frameworks that have gained considerable recognition in the educational literature. Arising from an analysis of these models, it is proposed that one of these models may be appropriate to the needs of contemporary learners. Lastly, section 2.6 presents the research questions that guided the design of the study.

Chapter 3 details the methodological orientation, research design and methods. The interpretivist form of qualitative research is outlined along with a rationale underpinning the methodological choice. Following this, the research methods employed in the study are described and a rationale for their selection. Key areas discussed include collection of data, selection of participants, analysis of data, quality assurance, and ethical considerations.

Chapter 4 is the first of two findings chapters and is divided into four major sections. Findings and a discussion are combined in this chapter. This chapter is more conceptual in orientation whilst the second findings chapter 5 deals with issues of practice. The chapter shows that learning with technology is naturalised into HE learning cultures. Following an introduction, section 4.2 addresses the impact of the naturalisation of learning with technology upon the way HEIs define the term blended learning. It centres upon how the nomenclature of blended and digital learning are inappropriate, and outdated. The theme of naturalisation is developed further in section 4.3 which concentrates upon disciplinary cultures. There are nuances in

disciplinary cultures that influence the nature of discourse concerning blended learning and learning within HEIs. Following the presentation of key evidence, a discussion of the analysis is offered in the final major section 4.4 of the chapter.

Chapter 5 is the second findings chapter and addresses a theme that learning with technology can be meaningfully supported through community and connection. The chapter is divided into three major sections. Findings and a discussion are combined in this chapter. Following an introduction, the first major section 5.2, explores the efficacy of assessment as a form of learning, that is formative and operationalised through collaboration. It also addresses how the technological, virtual, or blended setting, can facilitate a complex mix of assessment methods that promote learning. Furthermore, a need for HEIs to diversify their assessment approaches is addressed. Section 5.3 reports that faculty development is critical when it comes to effective technology usage for pedagogy. This section also presents findings concerning the nature and focus of meaningful professional development approaches. Furthermore, the support strategies and enabling structures at an institutional level relating to technology integration are outlined. Following the presentation of key evidence, a discussion of the analysis is offered in the final major section 5.4.

Chapter 6 offers a conclusion. It addresses how the major findings of the study respond to the research questions and research aim. The contribution of the study to the literature on learning/learning with technology is highlighted. Furthermore, the chapter notes the limitations of the study and concludes by detailing recommendations for future research.

On a final note, for the study purpose I did not restrict myself to a definition of blended learning.

Chapter 2 Review of Literature

2.1 The Context of the Contemporary University

The question of what learning competencies are desired of the 21st century learner can only be considered in the context of change. The social, scientific, political, and economic landscapes are experiencing unprecedented change, owing to the existential challenges of climate change, globalisation, and technology. Climate change by necessity has become the latest catalyst for change, and continues to generate unforeseeable issues (United Nations, 2019; World Meteorological Organization, 2020). This has resulted in a universal requirement for individuals to develop lifelong learning to resolve issues that have not yet materialised (Lehtonen, Salonen, & Cantell, 2019). Globalisation, as noted by the World Health Organization (2020), has interconnected societies by facilitating the mobility of people and the exchange of ideas, finance, services and goods beyond national boundaries. Such exchanges are advanced through international policies and organisations. Globalisation has grown the rate and volume of new knowledge development, which in turn has escalated global competitiveness along with societal challenges (Correia, Erfurth, & Bryhn, 2018). Economic and social wellbeing is to a great extent reliant upon funding for research to generate innovative knowledge (Department of Jobs, 2015; European Commission, 2014). This is particularly applicable to the areas of health which are especially receptive to technological innovation as evident in high levels of funding awarded for research (Burke, 2020). The current COVID-19 pandemic is a dramatic and ongoing example of the consequences of globalisation and technological co-operation in the science sphere. Digital environments have furthered the pace of knowledge development, by facilitating collaboration and knowledge exchange across spatial, temporal, and cultural boundaries (Milakovich & Wise,

2019). Furthermore, society is transitioning from a social era of Web 2.0 to "Web 3.0, and the 'Internet of Things'" (Sheldrake, 2015, p. 232). Markoff (2006) originated the term "Web 3.0" that is commonly used to describe this evolution. In this automation age, technologies are taking over the tasks of humans, and the new role of learners is to create the innovative thinking behind machines (Dede, 2010). This is of significance considering that in excess of 60% of primary school entrants, arguably future HE graduates, will work in jobs that currently do not exist (World Economic Forum, 2016). Moreover, a recent report by the World Economic Forum (2018) outlines that by 2025, more tasks within the workplace will be performed by machines than by humans whilst new technologies will generate more new undefinable jobs than those lost due to technology. In sum, it is society's preparedness and response capabilities that are critical when considering the future wellbeing of this complex society predicated upon learning (Wenger-Trayner & Wenger-Trayner, 2015). Assumptions on learning and the nature of skills, knowledge, values and attitudes required of learners have shifted, to align with the needs of a society reliant upon new knowledge (OECD, 2019). Lifelong learning, and new learning and innovation abilities, are regarded as integral ingredients to tacking societal change and ensuring that learners succeed both professionally and as inclusive citizens (European Commission, 2018).

The learning abilities considered most pertinent for the 21st century include creativity, collaboration, critical thinking and communication (National Education Association, 2012; Scott, 2015). Kivunja (2014b, pp. 45-46) suggest that these "4Cs" represent a "new pedagogical paradigm" compatible with a digital era. Moreover, these 21st century skillsets are interrelated. As explained previously, while learning societies progress due in part to technological innovation and globalisation, so too does the volume and complexity of issues that society must address. Therefore, an

ability to problem-solve, so as to tackle emergent issues in a rapidly altering world, is crucial amongst today's learners (Wenger-Trayner & Wenger-Trayner, 2015). Nonetheless, the process of problem-solving is complex. It is reliant upon the co-existence of an ability to think critically, exercise creativity, and work collaboratively (Leadbeater, 2016; Scott, 2015).

A great deal of definitional inconsistencies exist regarding critical thinking (Davies, 2011; Hitchcock, 2020). Nonetheless, many authors associate critical thinking with the notion of reflection (Dewey, 1997; Flores, Matkin, Burbach, Quinn, & Harding, 2012; Freire, 1998). For instance, Dewey (1997) contends that critical thinking is engendered though a process of reflection whereby learners make connections between historic practices and concepts. Critical thinking is also linked to ethics. As an example, Paul and Elder (2020), associate critical thinking with making ethical judgements that lead to environmental improvements. Differing slightly from this, Lipman (1995) connects critical thinking with ethical investigation rather than dispositions, and suggests it is the foundation of moral educational experiences. Although the issues emerging across the varying international landscapes are often unforeseeable, critical thinking is a means of identifying potential ways of resolving complex societal issues as noted by Aidil, Disman, and Kusnendi (2020). It is also a core component of research that is required to fuel the economic wellbeing of enterprise, notwithstanding a key competency of contemporary citizens (Scott, 2015). Returning to its nexus with ethics, critical thinking is intrinsic to ethical HEIs. For example, Strain, Barnett, and Jarvis (2009, p. 174) identify critical thinking as "a necessary hallmark" of the academic. Similarly, Garrison and Vaughan (2008) indicate that creative and critical reflection are longstanding HE ideals. Indeed, Altbach, Reisberg, and Rumbley (2009) contend that society is witnessing a gradual

return to education of a liberal nature as it is suited to developing critical citizenship. Furthermore, societies' future leaders must be critical thinkers so that ethical positions are proffered and safeguarded on issues engendering a growing chasm between poorer and wealthier nations. As an example, wealthier nations are in a financial position to up-skill and educate their populace in an increasingly technological world and are thereby ensured of continued investment from enterprise. However, this is not the case with poorer countries that experience significant financial constraints (United Nations Department of Economic and Social Affairs, 2020).

Aside from its role in problem resolution, critical thinking is imperative in an age of automation. Society is witnessing the emergence of the semantic Web 3.0 in which artificial intelligence (AI) is a key facet, as pioneered by Berners-Lee, Hendler, and Lassila (2001). Arguably, the semantic web is negating the democratic potential of learning in digital environments made possible by its predecessor Web 2.0 or what Blank and Reisdorf (2012, p. 537) infamously term "The Participatory Web". While it possible for learners to actively steer their learning, the added capabilities of Web 3.0 are debatably underpinned by an objective ontology. The AI property of Web 3.0 monitors individual learning patterns and interests and selects information that matches the preferences of individuals (Chauhan, 2015). Hence the ultimate decision regarding knowledge retrieval is often taken by AI. To be capable of recognising this potential bias, it is crucial that learners hold an ability to think critically. Significantly, a recent study by Nagel et al. (2020) involving 160 university learners identifies a need for learners to become critical thinkers as most struggle with evaluating the quality of online sources. Developing learners' critical thinking may lead to deeper learning experiences There is also the issue of surface approaches to learning with virtual technologies. For instance, a study by Alt and Boniel-Nissim (2018, p. 30) that

explores connections between surface and deep approaches to learning amongst adolescents' Problematic Internet Use, and a "Fear of Missing Out", shows that the latter is responsible for brokering a connection between internet use which is problematic, and surface learning. Marton and Säljö (1976) (as cited in Alt & Boniel-Nissim, 2018), are responsible for developing the concepts of surface and deep learning following the observation of learners varied reading approaches to reviewing academic literature. Debatably of more significance is that Marton and Säljö (1976) contend critical thinking can lead to deeper learning experiences.

As previously discussed, the resolution of complex societal issues and global competitiveness hinge upon a capacity to innovate/create new knowledge. This demands a nurturing of minds, to cultivate creative solutions and ideas that are integral to innovation and conflict resolution (OECD, 2019; Scott, 2015). Fundamentally, "creative and critical faculties are intimately linked" (Clegg, 2008, p. 221). Creativity is a non-linear dynamic process (Wallas, 2018). It cannot be measured (Matusov & Marjanovic-Shane, 2017). Agency must be retained, and guidelines loosely defined. A learner's ability to act as an agent of change is reliant upon his/her ability to think critically and exercise judgment throughout the creative process (Dwyer, 2017). While creative and critical learning abilities are central to the development of new knowledge (Scriven, 1976), the rate of response must also keep pace with emerging changes across the varying global landscapes. Correspondingly, collaborative learning experiences can grow the rate of innovation (Weisberg, 2006) and nurturing this ability amongst learners is a further 21st century learning requirement. A review of literature on creativity in relation to education by Bloom and Dole (2018) identifies collaboration as one of the primary facets of creativity across articles, despite variations in understandings of the creative process. Likewise, collaboration is shown

to develop critical thinking (Nelson, 2006). A desire for the resolution of complex issues and breakthroughs in science has also forged a need for individuals from a variety of disciplinary backgrounds to work collaboratively in research and development (Allmendinger, 2017). In business, hierarchal cultures are being broken down to drive innovation through teamwork. For instance, a study by Fay, Shipton, West, and Patterson (2015) investigating the efficacy of teamwork in the sector of manufacturing within the UK, reports increased innovation amongst organisations that use teamwork more widely. Collaboration is also a significant factor in the growth of regional/global alliances (Kang & Sakai, 2000), and is facilitated by the convenience and flexibility of digital environments. Furthermore, transnational collaborations must often take cognisance of, and comply with established national and international standards, regulators, and agreements (OECD, April 2020). Liaisons therefore between HEIs, private enterprise and governments are of critical input.

Disciplinary collaborations rather than disciplines in isolation are required to resolve global challenges (Holmes et al., 2018; Mauser et al., 2013). There are a range of approaches to disciplinary collaborations. Research by Choi and Pak (2006) offers clarity surrounding their definitions. Choi and Pak (2006) report that multidisciplinary collaborations, whilst drawing upon the knowledge of alternative disciplines, do not traverse disciplinary boundaries. On the other hand, Choi and Pak (2006, p.351) describe an interdisciplinary approach as that which "analyzes, synthesizes and harmonizes" connections between different disciplines. Thirdly, Choi and Pak (2006, p.351) define a transdisciplinary approach as that which integrates different disciplines "and transcends their traditional boundaries". Significantly, research suggests that the latter may be best suited to contemporary societal needs. Mauser et al. (2013, p.420) who discuss an iniative entitled 'Future Earth' that concerns international "global

sustainability research", addresses the nature and efficacy of a transdisciplineary integrated approach to research. Mauser et al. (2013) explain that transdisciplinary collaborations concern those within and beyond academia, such as those making economic, societal and policy decisions, along with the stakeholders impacted by such decisions. Elaborating further upon the nature of integrated transdisciplinary research, Mauser et al. (2013) explain that research "works across scientific disciplines, across regions and across societal groups. Moreover, it is a reflexive process which is "problem-oriented, driven by contexts of application, and starts with the joint framing of research topics and questions" (Mauser et al., 2013, p.428). Transdisciplinary collaborations involve diverse actors and "knowledge practices", whilst "traditional processes of disciplinary research" are supplemented and built upon (Mauser et al., 2013, p.428). Ultimately, it is the capability of an integrated transdisciplinary approach to transcend disciplinary foundations which deems it most suited to the resolution of unfolding societal issues. Disciplinary paradigms steer knowledge organisation, teaching, inquiry, and must be transcended to tackle societies ""wicked problems"" which a transdisciplinary approach does (Bernstein, 2015, p. 1; McGregor, 2015)

Rather than being steered by disciplinary methods, transdisciplinary approaches are continuously directed by the shifting patterns of social societies' issues (Mauser et al., 2013; Osborne & Dibben, 2017). Transdisciplinary approaches are generally connected to two dominant schools as pointed to by McGregor (2015), namely the Zurich and Nicolescuian. In outline, theorist Nicolescu (2008) believes that moving beyond disciplinary boundaries facilities a necessary interaction between the subjective and objective. This unifies disciplinary knowledge to ensure global comprehension. Similarly, the Zurich school builds on 'Mode 2' knowledge as pointed

to by (McGregor, 2015). Along with its transdisciplinary nature, Gibbons et al (1994, p.23) explain that "Mode 2" knowledge is socially distributed across diverse "potential sites of knowledge production and different contexts of application of use". This standpoint is also responsible for a present-day ideal of forging collaborations between government, enterprise, society, and higher education to achieve economic, geopolitical, social, and technological wellbeing. Arguably, the phenomenological emphasis of the Zurich method (McGregor, 2015), mirrors a situated theoretical view that societal transformation, globalisation, and politics are mediated by the identities of those within societal cultures (Wenger-Trayner & Wenger-Trayner, 2015). Equally it aligns with cultural researchers who signal that nuanced cultures negotiate the process of change (Rogoff, 2001; Wenger, 1998).

In sum, consideration by policymakers and researchers of the situated contexts of societal cultures is urgent. Globalisation is threatening cultural homogenisation and identity displacement. Discussing this, O'Hara and Biesecker (2003) explain that national policy and institutions must comply with the standards and values of international institutions such as the EU, IMF, WTO, that favour free trade and liberalisation of economies. Their inclination to benchmark standards discounts local cultures, and this can result in social inequity. Transdisciplinary can lead to more equitable policy generation (Mauser et al., 2013). On a final note, the success of this approach can be increased through the development of the 21st century skillsets already discussed in this section (McKee, Guimarães, & Pinto-Correia, 2015). Furthermore, collaboration can be more complex if facilitated by digital environments. In addition to a need to cultivate innovative learning capabilities, digital resources must be sufficiently innovative to support meaningful collaboration (Gareis,

Stanoevska-Slabeva, Blijsma, Vartiainen, & Verburg, 2009) and collaborators must hold a degree of digital literacy to interact online if required.

2.2 Changing Conceptions of Learning in Higher Education

The massification of higher education has elevated educational costs across HEIs. Globally HEIs are experiencing record numbers of learner enrolments (Altbach et al., 2017). This demographic is projected to rise to 414.2 million by 2030 from 99.4 million in 2000 (UNESCO, 2015). Essentially, mass HE has become universal (Watts, 2016). Consequently, HEIs are challenged with providing quality learning experiences to an increased and diversified learner populace (Akalu, 2016). Economic exigency has resulted in the majority of HEIs becoming excessively reliant upon external stakeholders for funding (Watts, 2016). This has blurred the lines of HE governance between internal and external stakeholders. Government, enterprise and learners, who traditionally looked upon the university for guidance, are now defining the value of higher education (Maassen & Stensaker, 2011). In return for funding, HEIs are publicly accountable for their productivity (Higher Education Authority, 2018; Salmi, 2008). Although the cultural, social and economic functions of HEIs are recognised in governmental policy literature (Higher Education Authority, 2018; OECD, 2017), many authors have for some time argued that it is the economic function of HEIs which is privileged above all else (Lolich, 2011; Teichler, 1999). Massification has led to the marketisation of HE (Kromydas, 2017). Brown (2010) explains that the majority of EU countries have centred to varying extents on marketisation owing to an EU agenda of modernising European higher education to compete on a global scale with other systems, along with contributing further to society. Yet, accompanying this vision are

attendant issues that constrain HEIs capabilities of achieving stakeholders' expectations. A number of stakeholders within academia contend that the strength of current external reforms are threatening the liberal role and identity of the university (O'Toole, 2017). Barnett (2013) notes that the public vision of the university, whilst continuously shifting, has become significantly narrow. He explains that ideologically the interests of the "entrepreneurial university" are linked to the knowledge economy (Barnett, 2013, p. 2). Ethically the concern is growingly one of self-interest and spatially the university must support its regional industry remit as well as local learners (Barnett, 2013). In a similar vein, Nixon (2008) stresses that predicating the efficacy of the university upon efficiencies, entrepreneurialism, competitiveness and reputation, is at the peril of excellence in both academia and the common good of society.

External stakeholders are unanimous in their view that the yardstick for quality education is its translation into employment (Bendixen & Jacobsen, 2017). As identified in the opening section, the currency of a dynamic labour market is the innovative learning abilities of its workforce. Such learning capabilities are most often identified as critical thinking, creativity, collaboration, and problem solving and are necessary not only for economic success, but for social wellbeing (Hoidn & Kärkkäinen, 2014). These interrelated 21st century skillsets or "transversal" skills (Department of Education and Skills, 2016, p. 38), empower individuals to adapt smoothly throughout their working careers (DES, 2016; El Mansour & Dean, 2016). Equally, they play a vital role in sustaining enterprise by yielding the innovation behind rapid advances in technology, particularly AI, which is jeopardising employment (Frey & Osborne, 2017; Manyika et al., 2017). A recent report of a study investigating the skillsets required for future jobs in 2030, projects that these 21st

century skillsets will be fundamental for making connections between the interplay of contexts such as urbanisation, globalisation, demographic shifts, climate change, politics, and social injustice, that will lead to job creation (Bakhshi, Downing, Osborne, & Schneider, 2017). Furthermore, the Bologna Process addresses the importance of these transferable learning skills in facilitating learner mobility and active participation across Europe to drive a sustainable European economy (Bologna, 2009). Collectively, these findings have led to policy recommendations that HEIs adjust their learning and teaching to cultivate these learning abilities in graduates (Higher Education Authority, 2018). For instance, in referencing the work of Bok (2005), the HEA in Ireland encourages faculty to "create a process of active learning, by posing problems, challenging student answers", and also to support learners' application of theoretical knowledge within "a variety of new situations" (Hunt, 2011, p. 53). The latter necessitates life-wide learning provision by HEIs such as service learning and work placement, to improve learners' preparedness for future work (Hunt, 2011).

The past decade has seen a rapid growth in learner diversity across HEIs owing to widening participation agendas (Higher Education Authority, 2008, 2015). Contributing factors include flexible progression routes such as recognition of prior learning, which have opened access to non-traditional mature learners and individuals from lower socio-economic backgrounds (Hunt, 2011). The number of international learners within HEIs has also grown significantly through learning mobility driven by economic, demographic, technological and political shifts (West, 2018). Moreover, the recruitment of international students is predicted to rise to eight million by 2025 (West, 2018). Once the home of solely the academic elite, HEIs have transformed into institutions democratically comprised of learners with varying learning abilities, goals,

levels of engagement and social and economic circumstances (Tremblay, Lalancette, & Roseveare, 2012). Nonetheless, a primary concern is the tailoring of learning experiences to all learners needs. For instance, noting the increased learner diversity in schools, Darling-Hammond (1997) stress that learning success is reliant upon teaching approaches that are adaptive to learners' distinct needs. There is also a shift in learner perspectives regarding the value of learning. Along with greater opportunities for college enrolment, learner consumers expect to be guided through the learning process and to be awarded a degree on completion (Kanuka & Brooks, 2010). Yet, data from several studies establishes that retention is a critical issue in HE and attrition rates are especially high amongst non-traditional learners (Hussey & Smith, 2010). Equally, research has established that first-year students, who likewise are a rising HE demographic, are at high risk of dropping out as they are challenged with learning autonomously (Ransome, 2011). Nevertheless, collaborative learning experiences appear to be positively linked to improved retention. For example, Tinto (1975, 2002) finds that social interaction between learners improves retention. Similarly, Read, Archer, and Leathwood (2003) show that faculty-learner interaction lowers attrition rates. These combined studies suggest that policy recommendations for interactive learning experiences may lower drop-out rates of learners most at risk. Furthermore, HEIs must offer spatially and/or temporally adaptive learning pathways to support the unique contextual needs of diverse learners. This lies within HE's remit in supporting industry, especially a need to upskill employees (Candy, 2000; McGee, 2017). At the same time, learners' personal commitments may demand learning flexibility (De La Harpe & Peterson, 2009). These routes can include full or part-time learning, off or on-campus (workplace/outreach centres), classroom and/or online (Hunt, 2011).

All stakeholders concede that learning experiences provided by HEIs must cultivate learners' 21st century skillsets (Department of Education and Skills, 2016, 2018). Yet, there remains a shortfall in graduate's innovative learning abilities (Goodwin & Hein, 2017; Grussendorf & Rogol, 2018). According to Brown (2018), marketisation has been a vehicle for the integration of neoliberal values into the organization and provision of higher education. Specifically, to borrow Argyris and Schön (1974, p. 10) locution, the "theories-in-use" of governments are underpinned by neoliberal values and are accountable for constraining learning innovation. HEIs are inadequately funded by HEIs (Downer, 2018; Expert Group on Future Funding for Higher Education, 2015). Furthermore, the Lisbon Strategy engendered the goal of building the best European knowledge economy through research (European Parliament, 23-24 March 2000). In consequence, both government and enterprise funding allocation favours research above teaching (Basken, January 3, 2019; Pleschova et al., 2012). Global ranking systems of HEIs also prioritise research, whilst teaching excellence is overwhelmingly disregarded. Noting this, Altbach (2012), connects the issue to massification along with the interrelating issues of commercialisation and competition amongst HEIs. Indeed, privileging research in university rankings has led to only a minority of EU countries strategically investing in HE learning and teaching (Vassiliou & McAleese, 2012). Through their reputation HEIs compete to attract acclaimed academics (Cummings & Shin, 2014), resulting in increased enrolments for a much needed income stream (Ballantyne, Bain, & Packer, 1999; Kelly, 12 September 2012). Furthermore, faculty promotion and tenure are based on research output, and some faculty are inclined to commit their time to research over teaching (Cummings & Shin, 2014).

Agendas to nurture comparable and compatible educational systems internationally (European Higher Education, 1999; Hunt, 2011) are also problematic. Policy demands that teaching and learning outcomes are measured against benchmarked learning and accreditation standards that are ensured by external quality assurance bodies, and student surveys (European Higher Education, 1999; Maassen & Stensaker, 2011). The danger with educational comparison and standardisation internationally, as foregrounded by Alexander (2012), is that national values, cultures and needs are overlooked. Essentially, to use (Entwistle, 2005, p. 80) term, adopting a single "gold-standard" in educational research fails to identify unique learning contexts in which learning ensues.

A growing number of authors concede that marketisation and neoliberalism pose the greatest threats to societal wellbeing. Forced competition breaks down social cohesion, preventing disciplinary collaborations crucial to resolving political, social, and economic issues, as explained previously. Lynch (2014, p. 5) argues that new managerialism that is an organisational constituent of neoliberalism, defines how individuals relate to one another "in transactional terms" based upon their performativity and productivity. Moreover, neoliberal values commodify education by shifting financial responsibility of education upon learners (Lynch, 2006, 2014). Naidoo and Williams (2015) who discuss HE in the UK context, similarly argue that the neoliberal HE marketisation frames learners as consumers and marketises learning. The potential consequences of this include decreased innovation in teaching, passive learners, and a reduction in the scope of disciplines knowledge (Naidoo & Williams, 2015). These issues impact education for the common good that is a function of HEIs. In a similar vein, Bendixen and Jacobsen (2017) foreground a reduction in knowledge in disciplines that are not considered relevant to employment. This issue could impede

problem resolution in a quickly changing world. Moreover, within marketised HEIs education is viewed as costly. Hence, while educational policy revolves around the notion of openness, not everyone has the financial means to participate in HE (Kromydas, 2017). This point is also made by Jones-Devitt and Samiei (2010) when addressing the issues when using components of neoliberalism, that Olssen and Peters (2005) identify as yardsticks for quality within a HE context. Jones-Devitt and Samiei (2010) conclude that HEIs are less accessible to some learners, learning quality is not an outcome of marketized HEIs/decreased state control, individualism negatively effects learners, and auditing regulation and accountability does little to improve learning.

Despite the manifold issues arising from the marketisation of HEIs, marketisation seems inescapable to some authors and therefore demands critical discourse (Molesworth, Nixon, & Scullion, & 2010). From the perspective of Barnett (2011), debates about HE are polarised and are either anti or pro HE marketisation. He regards these stances as rationalistic and value-laden and thereby "ideological" (Barnett, 2011, p.39). Instead, Barnett (2011) proposes that faculty nurture a pedagogic relationship with learners, that which prioritises liberal values. This he contends, will help reduce the harmful aspects of marketisation and increase the virtuous elements (Barnett, 2011). Be that as it may, the EUA stresses that institutional autonomy is essential for societal wellbeing (Estermann, Nokkala, & Steinel, 2011). As pointed to in this section, institutional autonomy is under threat as HE practices, and priorities are growingly defined by enterprise, governments and learners. Take for instance a need for HEIs to focus upon research that is traceable to the interconnected issues of inadequate government funding, HE marketisation, and HEIS accountability to external stakeholders. This can lead to a prioritisation by some faculty upon research

over pedagogy as mentioned previously. Considering this, the potential for faculty to nurture a pedagogic relationship with learners arguably rests upon sufficient funding by governments to HEIs. Adequate finance would place HEIs in a stronger position to privilege pedagogy.

2.3 Digital Learning as a Response

There is a prevailing belief that the configuration of the traditional university model is incompatible with contemporary learning expectations, and instead digital learning is a more appropriate response (Bulfin et al., 2015; Selwyn, 2010). Njenga and Fourie (2010, p. 199) identify "*technopositivists*" as individuals responsible for marketing digital learning to policymakers on unsubstantiated promises. Amongst the myths concerning eLearning addressed by Njenga and Fourie (2010) are promises that technology will transform teaching and learning practices, reduce HEIs costs, and ensure that HEIs remain relevant. A common assumption amongst HE leaders, is that digital learning integration is a means of reducing costs, widening access through flexible learning provision, and creating effective learning experiences (Graham et al., 2005; Vaughan, 2007). At a national level, digital strategy guiding HEIs suggests that digital learning will simultaneously enhance learning, reduce costs and improve efficiencies, promises that are rarely questioned in research. This is reported by Munro (2018) in a review of 13 national level strategies steering HEIs in the UK over a ten-year period. Guided by this dominant discourse, earlier accounts of government and institutional policy forecast the inevitably of digital learning in HE (Clegg, Hudson, & Steel, 2003). Correspondingly, digital learning strategies have become a feature within most HEIs internationally. For example, institutional level digital strategy is

evident within close to 80% of HEIs across the EHEA, either as stand-alone elements or as a component of a wider strategy (Gaebel et al., 2021). In spite of such strategies, recent literature reviews suggest that digital learning is not yet widespread in HEIs (Smith & Hill, 2018; Zhang & Zhu, 2016). Correspondingly, empirical studies are growingly concerned with blended learning (BL)/technology adoption/diffusion (Bokolo et al., 2020; Liu, Geertshuis, & Grainger, 2020; Porter & Graham, 2016). A well-developed strategy is identified as being essential to institution wide adoption of blended learning (Graham et al., 2013). As such, the projected inevitability has been replaced by an undisputed acceptance of digital learning as part of the typology of HEIs (Selwyn, 2013). Indeed, many learning technologists, and at times educationalists working within HEIs, claim that digital learning facilitates more effective learning experiences than face-to-face practice (Selwyn, 2011). Broadly aligning with this are research studies focused upon the efficacy of a digital learning approach (Zhang & Zhu, 2016). Moreover, a large volume of research investigates learning outcomes across different learning environments. This is identified in Drysdale, Graham, Spring, and Halverson (2013) analysis of the trends across 205 blended learning research theses (doctoral/masters). By their very nature these studies suggest that digital learning may be a better way of learning face-to-face. Furthermore, Clegg (2011, p. 177) points out that the labelling of "the digital age, the virtual society, the information society", implies that learning without technology could be ineffectual. Likewise, at the heart of digital society are citizens classified as "*Digital Natives*" (Prensky, 2001, p. 1) or "Homo zappiens" (Veen & Vrakking, 2006, p. 10). Arguably, these terms assume that the natural learning environment of contemporary learners is digital.

Under the umbrella of digital learning lie a variety of terms and approaches, which are lacking in conceptual consistency (Moore, Dickson-Deane, & Galyen, 2011). Of particular interest to HEIs, is digital learning that involves a virtual component. This can involve entirely remote distance learning or blended learning. Blended learning, which is sometimes referred to as hybrid or web-assisted (Tayebinik & Puteh, 2013), is the preferred mode of learning amongst HEIs. For example, blended learning degree provision, over wholly online learning dominates HEIs within member countries of the European Higher Education Area collaboration (Commission/EACEA/Eurydice, 2018; Gaebel et al., 2021; Gaebel & Zhang, 2018). The term blended learning is subject to multiple interpretations as reported in a review of definitions by Friesen (2012), and more recently by Smith and Hill (2018). On the other hand, some authors contest the use of the term. Oliver and Trigwell (2005) criticise the terms neglect of learning and contends that all learning can in theory be termed blended. Meyer (2005) warns against the use of metaphors for virtual learning as they imply that learning with technology is a different learning approach. Considering the standpoint of Meyer (2005), it is interesting that to date most BL studies are published in specialised computer/technology journals rather than mainstream educational ones (Smith & Hill, 2018). Regardless, the term blended learning has sustained such critiques and is widely employed in educational discourse and research. In spite of the ambiguity encircling the term, it is most often understood to mean the combining of online with face-to-face (Vaughan, 2014).

The possibility of using virtual environments to enhance HE learning is acknowledged by educational researchers. A widely known earlier article by Garrison and Kanuka (2004, p.94) addresses “the transformational potential” of virtual technologies. In this, Garrison and Kanuka (2004) highlight that virtual environments

can facilitate learners' participation and interaction within communities, without spatial and temporal limitations. The authors also argue that thoughtful learning design with technology can prospectively "transform the institution in a manner congruent with our highest ideals" (Garrison & Kanuka, 2004, p.103). In a similar vein, Wenger et al. (2009, p. 20) point to the "shared DNA" between participatory learning experiences in communities and digital technologies that support "interactivity and connectivity". This mirrors the learning approaches that policymakers regard as crucial to cultivating learner's soft skills to fuel the knowledge economy. Prior research also shows that meaningful learning design develops learners' ability to self-direct their learning. A blended learning study by Vaughan (2014), reports that undergraduate learners develop their capabilities of taking responsibly for their learning, when blended learning experiences facilitate active and collaborative learning experiences. This is noteworthy since a key challenge amongst non-traditional learners and first-year undergraduates is learning autonomously as noted in section 2.1. A further advantage of digital learning is the temporal and spatial flexibility it offers to lifelong learners. This supports their individual contexts such as work/life commitments (Commission/EACEA/Eurydice, 2018). Moreover, the functionality of the virtual technology has the potential to achieve the liberal functions of HEIs. As noted by Laurillard (2007), virtual technologies make learning personalisation possible. Learning personalisation, coupled with learning flexibility potentially offers more equitable access to disadvantaged learners and learners with disabilities (Higher Education Authority, 2015).

Marketisation of higher education and the interrelated reduction in government funding, is the mainspring of a HEIs need to compete for funding, improve efficiencies, and to reduce costs. National digital strategies steering HEIs consistently

emphasise the role of digital learning in marketing HEIs (Munro, 2018). Considering this, it is unsurprising that improving pedagogy can feature less amongst HE leaders (MacKeogh & Fox, 2009). HE policymakers view digital learning provision as critical to building their institutions reputation (Vaughan, 2007). Along with improving reputation, Bichsel (June 2013) suggest that eLearning integration is connected with growing revenue and enrolments, and ensuring the relevancy of HEIs as the number of private online educational providers rises. Furthermore, financially constrained HEIs can view certain learning models as a way of providing learner centred cost-effective teaching and learning. O'Flaherty and Phillips (2015) connect HEIs integration of economically effective teaching models, to a HE need to facilitate an expanding student populace or/and a need for efficiencies due reduced funding to HEIs at a national level. Moreover, structurally some HEIs may privilege research from faculty over learning amongst students, and are thereby inclined to reduce expenditure upon learning models (O'Flaherty & Phillips, 2015). On a final note, digital environments are considered by some HEIS to be an efficient approach to monitoring and managing teaching and learning practice (Oliver & Trigwell, 2005). As mentioned in section 2.1, this is necessary to ensure continued funding from governments.

While some authors such as Selwyn (2016) and Clegg et al. (2003) acknowledge the possibilities of digital learning, they problematise a widespread acceptance that digital learning is inevitable. According to Clegg et al. (2003, p. 39) assumptions of inevitability have resulted in "technological determinism" and a "neo-liberal globalisation paradigm" that must be rejected by faculty within HEIs. Selwyn (2016, p. 441) contends there is an urgent need for critical discourse to challenge the idealistic highly political and value laden "Ed-Tech Speak" amongst educationalists that disregards how technology and education relate to one another. Moreover, in an

earlier work Selwyn (2011) stresses that a failure amongst HE stakeholders to question this relationship privileges technology use over pedagogy. A focus on digital to engender collaborative learning experiences, arguably allocates a distinct paradigm to technology. It is the functionality of the "participatory web" 2.0 (Blank & Reisdorf, 2012, p. 537), that "harnesses the Web in a more interactive and collaborative manner" (Murugesan, 2007, p. 34). There is a need for HEIs to consider the pedagogy underscoring technology that is to date largely overlooked (Castañeda & Selwyn, 2018). Hence, in spite of an earlier prediction that digital learning will alter HE teaching as predicted by Timmis (2003), this vision has yet to be realised. There is a shortfall of pedagogically transformative learning experiences through technology that is widely acknowledged across literature e.g. (Englund et al., 2017; Kirkwood & Price, 2014). Technology is traditionally employed by faculty as a means of learning supplementation and improving efficiencies (Munro, 2018; Torrisi-Steele & Drew, 2013). Relatedly, HEIs have witnessed little movement away from summative assessment despite the innate collaborative functionality of virtual technologies (Williams, 2020).

The transmission approaches to technology integration in HE or what some connect to a neoliberal paradigm, is incapable of the nurturing of learners' 21st century skillsets, for which economic and social wellness are dependent. Moreover, learner retention is also a concern. With increased diversity within HEIs there is a need for faculty to meaningfully guide learners so they may succeed. As outlined in section 2.1, first-year (Wingate, 2007) and non-traditional learners (Hussey & Smith, 2010) are at the greatest risk of not succeeding at HE. While it is difficult to measure retention in relation to blended approaches owing to conceptual ambiguity, wholly online learning experiences are renowned for having high attrition rates (Picciano, 2006).

Exasperating potential retention issues, is the fact that there is limited digital literacy amongst undergraduates (Anthonysamy, 2019). Collectively, these issues challenge agendas to enforce digital learning, and calls into question the whole concept of the "digital native" (Kirschner & De Bruyckere, 2017, p.136). Furthermore, a need for HEIs to compete owing to reduced government funding, threatens a promise of equity of access through digital learning to individuals from lower socio-economic backgrounds. Discussing the implications of marketisation upon HEIs in the UK context, Munro (2018) argues that although it is reasonable to suggest that entrepreneurialism, efficiency, and massification are enabled by marketisation, any such gains need to be counterbalanced by diverseness, equity, and quality. Ultimately, rather than nurturing meaningful learning experiences that support a diversified learning populace, technology has become growingly bureaucratic in its uses. Efficiencies such as surveillance have been greatly improved (Selwyn, 2015), and this fulfils a government demand for QA of teaching and learning.

The issues identified thus far, can partially be attributed to a shortfall in scholarly research that critically appraises digital learning (Bulfin et al., 2015; Selwyn, 2013). How technology and education relate to one another is overlooked by educationalists and researchers (Selwyn, 2011). There is an inadequate regard of pedagogy that shapes technology usage in research, and HE discourse (Castañeda & Selwyn, 2018). While Njenga and Fourie (2010) suggest that research has not kept pace with the rate of technological development, this is less of an issue in recent years. Arguably, a more dangerous issue is that existing literature customarily voices the merits of digital learning. For instance, Kanuka, Holmes, and Cowley (2018, p. 258) argue that often those authoring research, who are also leaders of teaching and learning units in HEIs, embrace a "teaching quality rhetoric" in their practice and research. This

is to attract funding and awards necessary to sustain their role in HE. Debatably, this may be partially attributed to a low volume of research that critically appraises digital learning. Discussing the key role academics play in serving the economic functioning of countries around the world, amongst the gaps in research noted by Lupton, Mewburn, and Thomson (2018), is a dearth in empirical studies that explore the implications of digital learning practices for politics, culture, and society. Clegg (2011) foregrounds an urgent need for research that explores the impact of digital learning on HE cultures and academic needs, and the manner in which academic identity and university cultures influence teaching and learning practice. As this stand, decisions concerning the why, how and what of technology integration can be steered by policymakers within and beyond HEIs, which arguably serves to homogenise cultures of practice operating within HEIs. For example, research by Czerniewicz and Brown (2009, p. 130) concludes the policy concerning e-learning in respect to the allocation of resources, goals and values, are connected with "critical mass" along with facilitating the use of technology.

Cultures within HEIs, negotiate how the process of change occurs and what results emerge (Kezar, 2002; McGrath & Tobia, 2008). A growing body of literature investigating institutional change approaches concerning learning with technology establishes that successful change requires all stakeholders within a university to work collaboratively. Negotiating a shared vision of the nature of their institutional practices and roles in virtual environments ensures that the needs of different stakeholders are taken into regard (Moskal, Dziuban, & Hartman, 2013; Owston, 2013; Vaughan, 2007). Once again, this demands policymakers to be cognisant of the nature of institutional cultures and academic identities at the outset. This will help leaders identify and support the processes necessary to enable collaboration (Lloyd, 2016).

Traditionally, cultures in HE are disciplinary in nature and academic identities are determined foremost by their discipline (Barnett & Di Napoli, 2007; Becher & Trowler, 2001). Disciplinary traditions both shape and are shaped by academic identities (Hanson, 2009; Lueddeke, 2003). Likewise, academics value collegiality and their pedagogic autonomy is respected (Bennich-Björkman, 2007; Clegg, 2008). Furthermore, faculty understanding is gauged on their level of progression within their unique disciplinary area (Haggis, 2006). Learning quality is ensured through their own critical judgement. This contrasts with current practice that measures pedagogic success through employment and graduation numbers and via quantitative QA procedures, as previously outlined in section 2.1.

A contemporary neoliberal identity of HEIs, preoccupied with the saleability, thus performativity of the university, is incompatible with the ideals of traditional academia. Discussing the cultural repercussion of marketisation and commodification of HEIs, Furedi (2011, p. 2) explains that it aims to transform "an abstract, intangible, non-material, and relational experience into a visible, quantifiable and instrumentally driven process". Fundamentally, policymakers have shifted knowledge development away from disciplinary control (Henkel, 2005). This further erodes disciplines and displaces academic identities, issues that predate digital learning entrance into HE (Ainley, 2003; Churchman & King, 2009). Moreover, learning emergence is obstructed and to this end global sustenance is threatened. Nevertheless, a small number of authors who consider the nature of university cultures suggest that the nature of use and choice to integrate technology must be negotiated by the dynamic social and historical contexts that shape learning experiences (Clegg et al., 2003). Correspondingly, it is proffered that policy concerning digital learning must be unrestrictive and flexible to facilitate different HEIs cultures so as to foster innovation

(Czerniewicz & Brown, 2009). This is not always the case in practice. On this point, it is opportune to note how HEIs have been able to adapt variously to the current global crisis in health as a result of COVID19 thanks to technology. Typically, HEIs have been sufficiently flexible to allow learning, teaching and assessment to continue, albeit in some limited form, throughout the crisis. It is far too early to review the quality of that provision at this point since studies are not yet available, but in the context of the points being developed in this thesis the current pandemic and its impact on learning in HE will be a major line of enquiry in the coming years.

2.4 Efficacy or Efficiency?

The previous section identifies an assumption amongst some HE leaders that the traditional university model is incompatible with contemporary learning expectations. Leaders believe that digital learning is a more appropriate response. Contrary to this, several leading authors who acknowledge the possibilities of digital learning, problematise HEIs acceptance of digital learning as an inevitable means of supporting teaching and learning. They regard this contemporary HE paradigm as neoliberal and deterministic in nature and argue that it homogenises learning cultures by disregarding learners' identities. In the same vein, this section establishes and discusses an interrelated tension between HE leaders and faculty concerning the manner in which digital learning is integrated. Specifically, the priorities and approaches taken by HE leaders are met with criticism by some faculty and several leading digital learning authors. They contend that HE leaders can overlook the complexities and nuances surrounding a learning process. Interwoven in the following sections is the nature of HE leaders' assumptions, priorities, and approaches to digital

learning integration. The perspectives of faculty who challenge HE leaders' practice are also addressed. Throughout this section the term digital learning is used in a broad sense, to refer to blended or wholly online learning.

2.4.1 The potential uses of technology in HE.

HE leaders within HEIs oftentimes can consider digital learning to be a means of providing accessible, flexible, learning experiences, that will reduce expenditure and improve institutional efficiencies, along with ensuring the efficacy of learning. While common approaches taken in reaching these aims are explored in subsequent sections, there are a number of studies which bolster HE beliefs that these goals are attainable when taken separately. Dziuban, Hartman, Cavanagh, and Moskal, (2011) note that on the surface, blended learning popularity is instinctive amongst learners since they benefit from the convenience and flexibility of virtual courses whilst maintaining the advantages of campus-based learning experiences. In practice learning flexibility is facilitated through digital learning, although it can be less accessible to individuals from lower socio-economic backgrounds as mentioned in the previous section. Moreover, there is a dearth in research which strives to establish how blended learning has impacted access within HEIs, or indeed costs surrounding more flexibility in learning (Graham, 2013). Equally important is a leadership expectation that digital learning will be an effective learning experience. HE policy rhetoric broadly aligns with discourse concerning the nature of desirable learning experiences. The potential usage of technology for meaningful forms of pedagogy is noted by several leading authors in the area of digital learning e.g. (Garrison & Kanuka, 2004; Graham, Allen, & Ure, 2003; Kanuka & Brooks, 2010). There is a general consensus across literature that learners are at the core of effective learning design with technology (De La Harpe & Peterson, 2009; Torrisi-Steele & Drew, 2013). In particular, collaborative/active

learning experiences are advocated (Graham & Robison, 2007; Vaughan, 2014). Correspondingly, opportunities for peer-to-peer, and/or learner to faculty interactions are suggested to yield deeper learning outcomes. Online peer interactions are linked to critical thinking development amongst learners (Greenlaw & Deloach, 2003; Williams & Lahman, 2011). Peer interactions in a blended environment can also positively shift adult students' social capital and social inclusion (Cocquyt, Zhu, Diep, De Greef, & Vanwing, 2019). This outcome serves the liberal arm of a university education. Furthermore, to align with a learning process, blended learning can facilitate authentic assessment practices (Vaughan, 2014). For example, Gikandi, Morrow, and Davis (2011) conducted a systematic review of studies concerning formative online and blended assessment that spans almost a decade. The authors conclude that "effective online formative assessment can foster a learner and assessment centered focus through formative feedback and enhanced learner engagement with valuable learning experiences" (Gikandi et al. Morrow, p.2333). The key constituents of such experiences include feedback that is formative and interactive and forms of assessment that are continuous authentic activities. Corresponding with this, the efficacy of peer assessment is widely acknowledged across 134 studies on peer assessment between the period of 2006 and 2017 (Pereira, Flores, & Niklasson, 2016). In line with policy demands, formatives assessment approaches are shown to develop learners higher order capabilities. For example, Vaughan (2014) mixed methods study of a blended learning courses, involving 273 first year learners and 8 faculty over a two-year period, reports that assessment through collaboration and active learning design with technology connects with learners needs. Learner become self-directed via the support of peer discourse. Discussing a community of inquiry model, Vaughan, Cleveland-Innes, and Garrison (2013) identify effective online

assessment, which develops learners' personal metacognitive strategies and skillsets, as a triad of instructor, peer, and self-assessment. Outside of this model, a duality of online self and peer assessment/feedback is shown to improve thinking and enhance outcomes of learning amongst pre-service teachers (Lynch, McNamara, & Seery, 2012). Taken separately, peer assessment is found to improve critical thinking of learners within general undergraduate education courses (Zhan, 2020).

2.4.2 Limited research indicating that technology can achieve a dual agenda of improved efficiencies learning efficacy.

While there are studies noting the potential uses of technology for meaningful forms of pedagogy or documenting the ways that technology might be used to improve institutional efficiencies, there are only a limited number of studies that centre upon adoption/integration of digital technologies at an institutional level. Such studies are required to help steer those in leadership/HEIs. This research shortfall is documented by researchers over the last decade (Drysdale et al., 2013; Graham et al., 2013; Mihai et al., 2021; Porter et al., 2014; Smith & Hill, 2018). Moreover, leadership is rarely a focus of research in the area of digital learning e.g. (Ciabocchi, Ginsberg, & Picciano, 2016; Fredericksen, 2017; Jameson, 2013; Porter et al., 2014). This is disconcerting since leaders can lack knowledge of digital learning. For instance, Moskal et al. (2013), who discuss the efficacy of digital strategy that aligns with different HE stakeholders' needs, stress that administrators' knowledge of digital learning can be limited having little experience of this approach during their education. This makes it challenging for leaders to connect institutional success and strategy with blended learning. In the same vein, Fredericksen (2017) who foregrounds a research neglect of leaders of online learning, argues that leaders' insufficient knowledge springs from the infancy of their roles. Collectively, a dearth of institutional level studies of digital

learning and HE leaders is significant since technology integration within HEIs is more successful in improving efficiencies than the efficacy of learning experiences (section 2.3). Moreover, of the studies that centre upon institutional level digital learning, few specifically seek to establish whether the array of HE leaders' goals mentioned above, are simultaneously attainable. Whilst studies discuss some or all of these elements, the focus is most often upon scaling digital learning, both in relation to uptake and the efficacy of learning (Graham et al., 2013). An entire book edited by Lim et al. (2016) is comprised of empirical studies concerned with scaling digital learning with an end goal of enriching learning and widening access. Regardless, a more recent cross institutional case study, conducted by Arizona State University and the Boston Consulting Group demonstrates that digital learning can successfully achieve the triad of priorities generally held by HE leaders: widening access, reducing expenditure, and enriching the quality of learning (Bailey, Vaduganathan, Henry, Laverdiere, & Pugliese, 2018).

Bailey et al. (2018) contend that HE leaders who accurately calculate their expenditure, and identify the benefits of digital learning, will improve their decision-making process and overall efficiency of institutional operations. To achieve these goals, the authors with the help of HE leaders and specialists, develop a framework that they conclude accurately measures HEIs return on investment (ROI) from digital learning. This ROI framework measures the impact of digital learning at an institutional and learner level in relation to learner access, learning quality, and expenditure. To demonstrate that digital learning can achieve this triad, the authors employ this framework to calculate the ROI between face-to-face and digital learning in a number of HEIs. At the outset, they define three approaches to digital learning which are the focus of their report. In outline, "Fully online programs" are completely

online courses with no face-to-face elements, “Online courses” are distinct courses delivered online which can be taken by either campus-based or entirely online learners, and thirdly, “Mixed-modality courses” involve a combination of face-to-face learning, and online components that replaces class-time (Bailey et al., 2018, p.11). Guided by an advisory board of experts, fifty US HEIs were initially selected. Each of these HEIs have an established reputation for exceptional learning outcomes coupled with large enrolments from minority groups and socioeconomically disadvantaged learners. Ultimately, six HEIs agreed to participate. These HEIs have an undergraduate learner demographic in excess of 20,000 and a minimum of 20% distance learners. Additionally, their graduation threshold is at most six years for four-year degrees and three years for degrees listed as two years. Furthermore, 20% of all learners qualify for Pell grants. These case studies were conducted over a two-month period. Interviews were held regularly with HE leaders to gain insight into unique institutional contexts, success factors, and strategic change approaches. Data was also provided by both research and finance teams within each HEI for the period of 2015-2016.

Improving learner access in the above studies was gauged upon growing enrolment figures. Findings reveal that learner access improved amongst all learners in digitally supported environments. Several HEIs experienced a rise in enrolments amongst minority groups, such as learners from lower socio-economic backgrounds, females, and most notably amongst mature learners. The authors correlate enrolment growth with flexible start dates and a reduced dependence upon physical infrastructure facilitated through virtual learning environments. Learning outcomes were evaluated using grades ABC and DFW grade (%), retention and completion rates, time to completion, and the transfer-out-rates of learners. Findings show that the learning outcomes within mixed-mode undergraduate courses were superior in a greater

number of participating HEIs. Similarly, entirely online courses proved equivalent to or occasionally richer learning outcomes than face-to–face learning. However, the authors observe a "digital learning paradox" (Bailey et al, 2018, p.22). Although retention and completion rates were higher in online environments, generally learners' grades were lower. HEIs postulate that this issue may relate to faculty competence levels with teaching online. It is also hypothesised that mature learners, who are a large online learning demographic, may have less time to dedicate to their learning owing to work/life commitments. Lastly, economically the HEIs in this study indicate that digital learning lowers learners' costs by reducing their time to obtain a degree, decreases learners' tuition costs, and enables them to earn a higher wage at a faster rate. From an institutional perspective savings are also reported via digital learning whereby the cost of a credit hour per learner was lower. Several HEIs reduced institutional expenditure by increasing the ratio of learners to faculty, employing a greater number of adjunct faculty who are less costly than tenured faculty, and avoiding additional operational outlay.

Bailey et al. (2018) conclude that digital learning can achieve a triad of improved access, reduced expenditure and effective learning experiences. This corresponds with the goals held by many HE leaders. Nonetheless, a key issue identified amongst many authors is a low volume of digital learning research that focuses upon faculty. This deficit is reported in Torrisi-Steele and Drew (2013) earlier review of 827 blended learning articles reports. Similarly, in their investigation of trends in 205 research dissertations (masters and doctoral), Drysdale et al. (2013) point to a shortfall in research concerning educators' dispositions. More recently, Smith and Hill (2018) identify a neglect of faculty in their meta-analysis of research between 2012-2017. Porter and Graham (2016) stress that this research deficiency is significant

in view that faculty are responsible for cultivating meaningful learning experiences. Also making this point, Niemiec and Otte (2009) convey a requirement for research that addresses faculty roles and assumptions concerning digital learning. At the same time, investigating faculty perspectives is also imperative to inform HEIs so they may devise appropriate strategies to effectively support faculty needs (Ocak, 2011; Torrisi-Steele & Drew, 2013). Equally noteworthy across an insufficient number of empirical studies that centre upon faculty, is a common focal point of improving faculty uptake (Bervell & Naufal Umar, 2018). As pointed to by Kirkwood and Price (2012, p. 1) "promoting increased use of technology does little, if anything, to improve student learning". Instead, the authors argue that success is dependent upon HEIs paying attention to academic perceptions regarding learning and teaching involving technology along with supporting shifts in relation to learning and teaching with technology.

2.4.3 Tension between HE leaders and faculty/educational authors.

The literature on digital learning adoption identifies a tension between HE leaders who are often keen to integrate and scale digital learning, and faculty who can be unwilling to embrace this learning approach. Among the common constraints that can hinder faculty development of digital learning are lack of knowledge concerning technology usage for pedagogy (Ocak, 2011), heavy workload (Oh & Park, 2009) insufficient time, resources and supports (Vaughan, 2007). While HEIs may be attempting to negate these barriers, an overarching issue exists. Faculty question the efficacy of a digital learning approach and few HEIs have been successful at shifting this belief. This is supported by Allen and Seaman (2015) who explain that while in excess of two thirds of HE leaders regard digital learning as superior, or at least comparable to face-to-face practice, faculty increasingly question the "value and

legitimacy" of digital learning (Allen & Seaman, 2015, p. 21). A faculty reluctance to integrate technology into their practices is identified in a number of empirical studies e.g. (Hodgson, 2005; Oh & Park, 2009), Nevertheless, a critical discourse is gaining currency within educational literature that could serve to enlighten HEIs. Faculty question the dual agendas of HE leaders and contend that a HE leadership desire for efficiencies presents challenges to the efficacy of learning.

Several leading authors in the field of digital learning who focus upon pedagogy, believe that HE leaders' perspectives and priorities can overlook the complexities of a learning process. They trace this conflict to a consumerist HE model that they feel has resulted in HE leaders rating the learner as a customer rather a collaborator within the learning process. Kanuka and Brooks (2010, p. 69) succinctly explain the issue with this consumer orientated "post-Fordist" HE paradigm. In their article discussing distance education, the authors identify a theoretical nexus between the learning requirements valued by HEIs, a constructivist paradigm, and digital learning environments as a supporting resource. However, they argue that enriched learning experiences cannot be achieved simultaneously with HE leaders aims for learning flexibility and cost reduction. This is in view that HEIs market prioritisation favours a supply of flexible products for consumers while constructivism supports learners' needs via flexible learning processes. Furthermore, they highlight that HEIs are selling a product which is a credential to learner consumers. This they feel is in contrast to the traditional learning processes within HE credentialed systems that require learners to earn an award that is by no means guaranteed. This consumerist model is responsible for faculty concern regarding the efficacy and legitimacy of digital learning (Kanuka & Brooks, 2010).

From a critical feminist standpoint, authors McLean et al. (2019) investigate the potential of a HE blended learning course in supporting decolonising pedagogies that encompass socially just and equitable learning experiences. They conclude that a prioritisation of cost reduction and a framing of learners as consumers by HEIs oftentimes entrenches the nature of digital learning practice through top-down directives. This is likely connected to a HE accountability culture. For example, Adams (2011), who discusses policy in an English context, stresses that "an economically determinist orientation for educational outcomes" runs counter to a requirement for education to "both transform and be transforming" (Adams, 2011, p. 21). Indeed, retrospectively, educational literature acknowledges that summative approaches demand teaching and learning practices that are predefined (Yorke, 2003, 2011). Additionally, some authors claim that HEIs emphasis on enrolment growth and their limited resources are steering the nature of assessment rather than learning-centred practice (Hanrahan and Isaacs 2001). Moreover, it is suggested by Graham (2013, p. 25) that "education is a design-oriented field" and therefore "must be concerned with trade-offs involving cost, efficiency, and effectiveness". In sum, this section establishes that faculty who focus on pedagogy believe that HE leaders can overlook the complexities of the learning process. Several authors trace this to a consumerist HE model that privileges product over a learning process. The next section identifies and discusses the pragmatic and oftentimes instrumental approaches taken by HE leaders to achieve the triad of improved access, enriched learning, and reduced costs. Included is an appraisal of a list of "promising practices" identified by Bailey et al. (2018, p.30) following a review of the success strategies of HEIs in their study. These practices are proffered as a guide to HEIs who wish to achieve this triad.

2.4.4 Recognising the nuanced nature of a learning process.

HE leaders' priorities and approaches concerning digital learning often fail to recognise the nuances of a learning process. For example, a large volume of digital learning research is comparative in nature as identified in a review of categories and themes in 103 articles by Zhang and Zhu (2016). These studies hinge the quality of learning upon the learning outcomes between face-to-face and blended or wholly online learning. This aligns with the methodological approach taken by Bailey et al. (2018). Furthermore, a vast proportion of these digital learning studies award blended learning a superior status to face-to-face. This is reported in a review and meta-analysis of over 1000 studies of online learning over a twelve-year period by Means, Toyama, Murphy, Bakia, and Jones (2009). There are also a large volume of studies that identify entirely remote learning as equivalent to face-to-face as found in an analysis of research by Zhao, Lei, Yan, Lai, and Tan (2005). In a similar vein, Allen and Seaman (2010) report that HE leaders regard online learning equivalent to or superior to face-to-face. These findings correspond with those of Bailey et al. (2018). Nonetheless, their methods of analysis arguably have several limitations.

Critiques have cited 'no significant difference' between the learning outcomes of varying environments and insist that learning instead must be gauged using a pedagogic lens (Russell, 1999; Western Interstate Commission for Higher Education, 2018). A further contention is an absence of a universal definition of blended learning which renders it difficult to accurately measure learning outcomes. As pointed to by Oliver and Trigwell (2005), developing blended learning as a research field is problematic since the term is ambiguous. This complexity is also noted by Smith and Hill (2018) following a review of definitions in BL research. A substantive source of uncertainty is that learning outcomes inclusive of retention are often synonymous with

grades. This indicator conceives learning as acquired information. Consequently, learners primary concern is earning a credential as opposed to the quality of the online learning experience (Ciabocchi et al., 2016). More importantly, employing learning environments as a yardstick for learning outcomes conflicts with learning processes. Several authors agree that learners must be responsible for negotiating where they wish to learn. Discussing the facilitators of learner success in a blended environment, Stacey and Gerbic (2008) highlight the learners' readiness and maturity for BL is key since virtual learning requires learners to be capable of learning autonomously. A study by Vaughan (2014) concerning first-year learners in a BL course shows that learners are challenged when it comes to self-directing their learning. Moreover, low achieving learners can be less competent in virtual environments. This is among the findings of Owston, York, and Murtha (2013) study involving 577 learner perceptions of BL courses in relation to convenience, satisfaction, engagement and outcomes of learning. It is also important to build flexibility into learning design. Yet, these biases regularly escape criticism from HE leaders. As a result, studies that objectify learning are used as universal standards for pedagogic excellence in HE policy and practice.

The issue of pedagogic prescription by HE leaders can also be interrelated with their concurrent desire to improve efficiencies and reduce cost. Digital learning models and approaches are often prescribed by HE leaders, despite an assumption that these models support learning emergence. A clear example of this dichotomy is evident in the favourable practices identified by Bailey et al. (2018). Participating HEIs in their study identify the characteristics of effective learning design for digital environments however, their practices fail to support a learning process. They suggest that faculty inclusion in decision-making processes is crucial. Likewise, it is important to cultivate innovative cultures of pedagogy. It is also proffered that learners must be

sufficiently supported throughout the learning process through individualised feedback approaches. This rhetoric aligns with research investigating the nature of meaningful practice. Research exploring effective learning design establishes that faculty learning and teaching must be an institutionally supported process of experimentation (Czerniewicz & Brown, 2009). An article by Garrison and Kanuka (2004, p. 103) that aligns meaningful forms of technology integration with the values of HEIs, asks where "the true spirit of exploration and experimentation when it comes to teaching and learning" has gone. Garrison and Kanuka (2004) claim that leaders are not applying HE values to learning and teaching practices with technology in the same way they are to research concerning technology. Furthermore, digital learning development must be a collaborative endeavour involving faculty and learners, and sometime learning technologists (Wenger et al., 2009). Learning support through iterative formative feedback approaches is also essential (Muuro, Wagacha, Kihoro, & Oboko, 2014). Nevertheless, at odds with these recommended practices are the pragmatic or positivist approaches taken by the HEIs.

Several of the HEIs in Bailey et al. (2018) review adopt and advocate a portfolio learning approach. This entails making available to faculty a selection of digital learning models that are preferably mixed mode (superior) and designed by centralised teaching and learning units. This portfolio approach is believed to improve learning and help HEIs reach economies of scale through widened access. Likewise, they maintain it improves efficiencies and expenditure by reducing course duplication. Debatably, this approach to course design is instrumental in nature as pedagogy is predefined, and pragmatic in application considering faculty select whatever model 'fits best' with their learning needs. To this end, the pedagogic autonomy of faculty impedes a learning process. Nevertheless, there is a move towards cost effective

production of blended learning models to reduce expenditure as discussed in section 2.3. Compounding this issue is a reluctance from HEIs to support cultures of pedagogic exploration as mistakes can be exceptionally costly in digital environments (Latchem, 2005; Salmon, 2005).

A further practice advocated by HEIs is learning analytics and the monitoring of learners through algorithms. The participating HEIs in Bailey et al. (2018) report that monitoring learners using adaptive courseware has helped them to anticipate students learning issues and consequently improve their learning. Concurrently, the HEIs maintain that analytics helped equip them with an ability to control digital learning expenditure and improve efficiencies by tracking faculty practice such as professional development. However, while surveillance is shown to improve efficacies in digital learning research, several authors are critical of claims concerning improved learning outcomes as noted in section 2.3. Ultimately, 'big data' quantitatively predicts future learning needs rather than supporting their emergent requirements. Discussing a rise in the use of analytics across Irish HEIs to improve retention, a recent article by Clarke-Molloy (2018) concludes that it is the interactions between learners and faculty that are most conducive to learners needs.

A large number of HE leaders believe that faculty CPD in digital learning will lead to improved learning experiences. For example, Bailey et al. (2018) highlight a need to develop expertise and capabilities for digital learning to safeguard the efficacy of learning in HE. To achieve this several HEIs advocate the use of centralised teams to deliver professional development in the fundamentals of good digital learning pedagogy to faculty separate from their everyday pedagogical practices. However, research identifies a faculty mistrust of teaching and learning centres and record low attendance levels (Slowey & Kozina, 2013). Although research investigating effective

CPD suggests that learning development must be an iterative process quite often in practice HEIs approaches to CPD can be substandard (Askerc Veniger, 2016). Faculty are often critical of the pragmatic nature of professional development training that covers generic teaching and neglects disciplinary pedagogic cultures (Viskovic, 2006). Research by Early and Murphy (2009, p. 230) reports that faculty desire a move away from a "technical "nuts and bolts,"" focus upon virtual learning platforms, to a focus upon the pedagogical practices appropriate to the needs of contemporary learners in online learning. There is also a desire for increased "pedagogical professionalism" from faculty which results in discouraging working environments and managed faculty practices (Huber, 2010, p. 72). It is also reported that faculty regard some staff in these centres to be limited in their practical experience of pedagogy (Canning, 2007). On the other hand, Kanuka et al. (2018) identify a perceived need amongst those responsible for PD to sustain their role in a financially constrained HE environment. Kanuka et al. (2018) explain that faculty responsible for teaching and learning units are merely accepting and implementing policymakers' poor pedagogic choices without protest, even though they may hold differing viewpoints on learning.

Many HEIs believe that digital learning can widen access through enrolments, enrich learning experiences, and reduce learners and institutional costs. However, as established above, the latter is oftentimes associated with cost effective pedagogic models being introduced into HEIs. Although Bailey et al. (2018) establish that access has been widened through enrolments, and retention and completion improved, they often fail to demonstrate that the learning quality has been improved. Widened access to mature learners may be explained by research surrounding course selection and digital learning. In the main, digital learning occurs in disciplines with a high number of working learners (mature), that demand upskilling. These include nursing (Jokinen

& Mikkonen, 2013; Payne, 2011) education, medicine and business (Payne, 2011). Essentially mature/non-traditional learners are motivated primarily by a need for spatial/temporal learning flexibility rather than the efficacy of learning experiences. Finally, partnerships with outside vendors are advocated by HEIs in Bailey et al. (2018) to grow HEIs enrolments and capabilities and simultaneously nurture innovation and reduce cost. Broadly consistent with this are recent reports that the HE online market for tech companies is set to grow exponentially by the year 2026 (Advance Market Analytics, 2021). Nevertheless, the quality of learning is questionable in view that outside stakeholders retain control of the nature of the learning experience to a large degree. For instance, following a number of interviews with individuals responsible for technology decisions within HEIs, Hollands (2017) finds that some interviewees believe that products are sold by vendors rather than ideas or processes, and these products seldom address actual pedagogical requirements.

The HEIs in Bailey et al. (2018) study maintain that the operational costs associated with digital learning are less than face-to-face. At variance with this is research pointing to insufficient evidence of claims of cost savings through digital learning. Making this point, Bowen (2013, p. 47) explains that a review of multiple studies revealed a "lack of good estimates of likely cost savings in a steady state". Laurillard (2007) stresses that most studies that analyse costs are inaccurate. The author instead proposes a tool for modelling that allows HEIs to consider costing in relation to the pedagogical benefits of digital learning. Essentially, the allocation of learning costs conflicts with a learning process. Furthermore, it is argued by HEIs in their study that the costs of online learning can be reduced through the employment of adjunct faculty. However, Ciabocchi et al. (2016) research into the perspectives of 129 faculty government leaders in US, reports their concern with HEIs that employ adjunct

faculty to reduce costs and to educate an increasing number of learners. They believe the quality of learning can be threatened as tenured faculty can be more familiar with content. Additionally, they stress that adjunct faculty can be less motivated owing to a lack of job security and lower pay, which also influences quality of learning. Interestingly, while the HEIs in Bailey et al. (2018) study bypass tenured and senior faculty in their employment of adjunct faculty, they suggest that tenured faculty champion digital learning owing to their pedagogic knowledge to improve faculty uptake. This concept in promoting digital champions is widespread across HEIs who wish to embed digital learning (Owston, 2013). However, it is unlikely that tenured faculty, that are slighted by HE leaders when it comes to digital learning provision, will be willing to champion this approach. This is aside from HE leaders' acceptance of digital learning as the best learning approach, which threatens faculty pedagogic autonomy.

In sum, this section (2.4) establishes that some HE leaders consider digital learning as a promising means of widening access, reducing expenditure, improving efficiencies and enriching learning experiences through learning-centred practice. Yet despite these claims practice is generally formative rather than transformative. While faculty perspectives are neglected in research, existing studies indicate that faculty are unconvinced of the innovative potential of this approach. Significantly, several leading digital learning authors who focus on pedagogy suggest that HEIs can overlook the complexities of a learning process. They suggest that this issue stems from a consumerist model in HE. Correspondingly, HE leaders often prioritise the provision of a product to consumers rather than supporting a learning process. HEIs interrelated desire for efficiency and cost savings can result in pragmatic and instrumental approaches to practice. It is argued that this triad that is explored in Bailey et. al.

(2018) cannot be achieved at the same time. Nonetheless, commonalities of perspectives are identifiable amongst leading digital learning authors concerning the characteristics of effective digital learning. However, their theoretical vantage points can vary. A small number of pedagogic models/frameworks have gained considerable recognition in educational literature and are believed to support transformative learning experiences. This is noteworthy considering a scarcity in research investigating the theoretical underpinnings of digital learning (Drysdale et al., 2013). Equally there is limited research that explores digital learning pedagogical models relating to faculty development (Stacey & Gerbic, 2008). There are explored in the next section.

2.5 Meaningful Learning Models

The previous section identifies a tension between HE leaders who desire improved efficiencies and enriched learning experiences through digital learning, and faculty who believe that these dual agendas are not simultaneously achievable. Some faculty argue that HE leaders approaches to technology integration can overlook the complexities of a learning process. They maintain that pragmatic and instrumental approaches to pedagogy have ensued from interlinked agendas of efficiencies and cost reduction. Nevertheless, research suggests that technology can be integrated in a manner that supports learning emergence. A small number of pedagogic models and frameworks have gained considerable recognition in educational literature and amongst HE faculty. This section identifies and describes three prominent models/frameworks: a 'Community of Inquiry (CoI), 'Technological, Pedagogical and Content Knowledge' (TPACK), and 'Communities of Practice (CoP). It also

establishes and discusses conceptual or practical issues relating to these models despite their educational acclaim. Arising from this analysis, I propose that a CoP framework may be most suited to the needs of contemporary learners. Subsequently, to address the conceptual limitations of a TPACK framework, I incorporate Wenger's (1998) concept of social learning within a CoP into the TPACK framework. This section also establishes that faculty can sometimes struggle with deciphering the nature of effective learning to meet with their learners' needs. In view of this, a table developed by Bucci (2002) that parallels paradigms of education educational with learning and teaching pedagogies designed to further faculty understanding of learning theory, is explored. Addressing the limitations of this table in its current form, I integrate Wenger's (1998) concept of social learning within a CoP, which the table currently overlooks. Furthermore, I integrate key components of the TPACK framework, PCK, into the table, as these can be difficult to understand. Overall findings in this section signify that pedagogy is complex, especially when combined with virtual learning environments. Therefore, this section foregrounds a need for a faculty voice within HEIs.

2.5.1 Community of Inquiry

A community of inquiry model (CoI) was developed by Garrison, Anderson and Archer (2000). This learning model is both widely acclaimed and employed in HE as it is considered a model for guiding online learning experiences (Annand, 2011; Garrison & Arbaugh, 2007). An extensive number of publications have also accumulated since its creation that adopt and/or critique this model ("CoI" 2018). A CoI is socio-constructivist in nature. In alignment with educational research,

the authors identify constructivism as the most popular theory of learning underpinning teaching and learning in digital learning environments (Conole, 2010; Swan, Garrison, & Richardson, 2009). Understanding the processes involved in critical thinking is regarded by Garrison et al. (2000, p.89) as "the ostensible goal of all higher education". The authors maintain that the social aspect of learning construction necessary for critical thinking is often discounted (Swan et al., 2009). They are steered by Dewey's philosophy that learning experiences must relate to our social and personal worlds (Dewey, 1958). The process of meaning construction within a CoI is a cognitive process within individual minds. However, learners' "ideas are generated, and knowledge constructed through the collaborative and confirmatory process of sustained dialogue within a critical community of learners" (Garrison et al., 2000, p. 91). In their seminal article introducing a CoI, Garrison, Anderson, and Archer (2000) explain that three interrelated elements must be present during an educational experience: social presence, teaching presence, and cognitive presence. It is the interplay of these three presences that lead to meaningful, deep, and higher order learning experiences (Garrison et al., 2000; Rourke & Kanuka, 2009).

The cognitive presence is a key area of focus for Garrison et al. (2000). It is the location from which critical thinking ensues. Founded upon Dewey's notion of reflective inquiry, learning is a process of problem solving. Personal cognitive located meanings are connected with external practical collaborative learning experiences (Dewey, 1997; Swan et al., 2009). Based upon this concept, an earlier article by (Garrison, 1991) develops a practical inquiry model to support the process of critical thinking. This practical inquiry model is integrated into a CoI to represent the meaning making process within the cognitive presence. As depicted in figure 2.1 which is a reconstruction of a 'Practical Inquiry Model' (Garrison, Anderson, & Archer, 2001, p.

9), critical meaning making is “an iterative and reciprocal relationship” between the individual psychological and collaborative sociological worlds (Garrison et al., 2000, p. 98). Four dimensions are involved. A shared problem or triggering event, leads to individuals search for insights. As ideas are generated through reflection, potential solutions or iterations emerge. These ideas are finally considered in a shared discourse and issue are resolved. Should solutions be rejected this non-linear process re-commences.

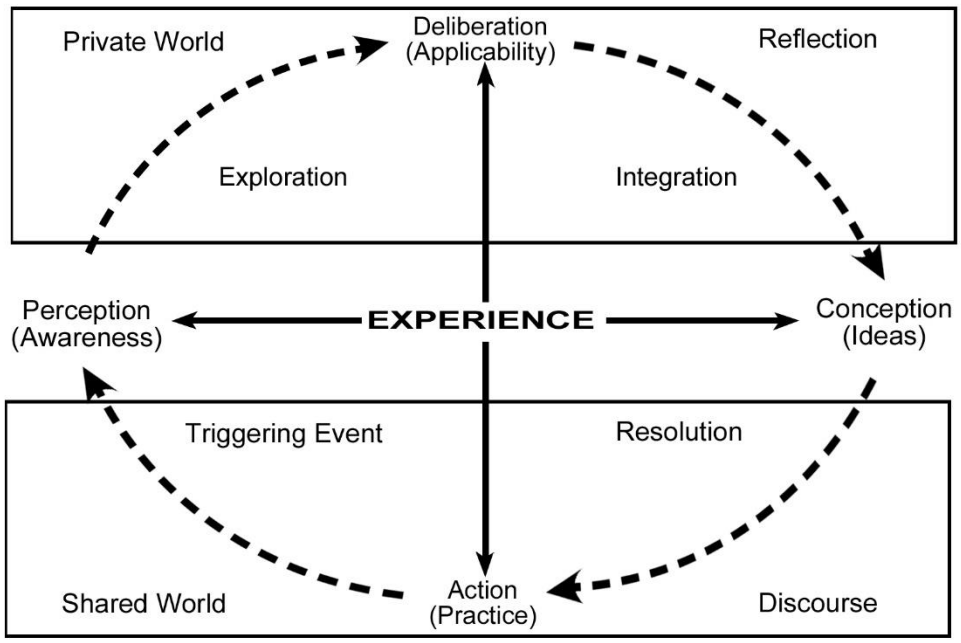


Figure 2.1 Practical Inquiry Model (Reproduction) (Garrison, Anderson, & Archer, 2001, p. 9)

Social presence is important as it influences the nature of learning communities and learner collaborations in online environments. While originally conceived as individual, social presence has since been revised as collective and social (Garrison & Cleveland-Innes, 2005). This presence is the most researched due to a concern for learners’ connectedness in virtual environments. Social presence supports the sociological aspects of the cognitive presence. It is the vehicle used by learners to integrate their characteristics into a community. Successful learning experiences are reliant upon learners’ commitment. Swan et al. (2009) claim that social presence

improves retention and community cohesion by fulfilling learners' affective needs. The teaching presence is the "binding element" in a CoI that ensures equitable balance between the social and cognitive presence (Garrison et al., 2000, p. 96). A community member who is usually a teacher, is charged with designing the varying elements of a learning experience. They must also facilitate discourse within learning communities. Occasionally, they may direct learning to prevent learning misconceptions and pedagogic misdirection. In sum, figure 2.2 'Elements of an Educational Experience' (Garrison et al., 2000, p. 88), illustrates the initial design of a CoI. Although the social presence has been revised in more recent research, the basic tenet of higher order thinking has gone unchanged (Garrison & Cleveland-Innes, 2005; Swan et al., 2009).



Figure 2.2 Elements of an Educational Experience (Garrison et al., 2000, p. 88)

Although a CoI is widely employed, a number of authors question the models claim to higher order learning. For instance, Rourke and Kanuka (2009) argue there is

insufficient empirical evidence to support this. Rourke and Kanuka (2009) conduct a comprehensive literature review investigation as to whether or not a CoI results in deep experiences of learning. Their methodology draws similarities between a CoI and Ausubel (1961) conception of meaningful learning as discovery or problem-based learning. They also align deep learning with Marton and Säljö's (1976) perspective that sees learners examining new knowledge critically and connecting it with "existing knowledge structures" (Rourke and Kanuka, 2009, p.24). Rourke and Kanuka (2009) identify two hundred and fifty-two studies citing a CoI model. Forty-eight of these analyse and collect data relating to CoI aspects. Of this forty-eight, student learning is a measurement in just five studies. Furthermore, the nature of learners self-reported experiences of learning is mostly didactic and autonomous. Rourke and Kanuka (2009) conclude there is no empirical evidence signalling that a CoI nurtures meaningful and deep online learning experiences. Moreover, the methodologies guiding the studies measuring student learning are problematic. There is a need for empirical research investigating the nature of learning experiences using a CoI model that will support or constrain higher order learning. Such studies would provide valuable insight into the nature and amounts of each presence within a CoI required for effective online learning experiences. This is also concluded by Rourke and Kanuka (2009).

Many authors, inclusive of Rourke and Kanuka (2009), problematise the nature of research employing a CoI to access online learning. Research is often quantitative and narrowly measures a single learning approach, usually discussion threads. In practice it is contended that meaningful learning can occur in learning situations beyond discussion threads. Shea et al. (2010) contest a CoI prioritisation of discourse and propose amendments to a CoI. In recognition of a rapid rise in online learning,

Shea et al. (2010) investigate the nature of teaching practice in virtual settings through the lens of a CoI model. Among their objectives is to understand how researchers estimate the teaching presence of instructors. Furthermore, they explore the effectiveness of teaching presence by establishing the nature of instruction across entire courses. Their research determines the teaching presence of two teachers with distinct teaching approaches who are teaching a wholly online business course at US HEIs. The three indicators of teaching presence are used to code teachers practices both within and beyond discussion threads (Anderson, Liam, Garrison, & Archer, 2001, p. 1). Findings present the nature of teaching practice as under-represented by researchers. Practice that occurs beyond discussion threads is generally disregarded. Research overlooks instances of instructional design, facilitation, and direct instruction. Shea et al. (2010) conclude by suggesting that researchers consider practice across courses in their totality to effectively measure all presences within a CoI. Furthermore, Shea et al. (2010) suggest that the teaching presence in its current form does not consider all bi-directional learning experiences. Their findings indicate that assessment and feedback are where most higher order learning occurs. These areas are discounted in the teaching presence. To remedy this issue, they propose that assessment be included as a fourth indicator within the teaching presence. They argue that this amendment, coupled with a recognition by researchers of all interactive learning experiences, could potentially grow the volume of empirical evidence linking a CoI with higher order learning. This could reduce the research gap identified by Rourke and Kanuka (2009).

Annand (2011) offers a comprehensive critique of a CoI definition of social presence through the lens of a literature review. The motivation steering Annand's review is to bolster Rourke and Kanuka (2009) study, that a CoI, "as is popularly

conceptualized, does not adequately inform the development of online education theory and practice" (Annand, 2011, p. 42). Annand (2011) attributes weaknesses within a CoI model to insufficient empirical evidence showing that a CoI can effectively steer the design of practice and theory for online learning. Following a systemic literature review critiquing the social presence of a CoI, Annand identifies a dearth in empirical evidence indicating that social presence positively influences cognitive presence. Annand (2011, p. 52) claims there is a chasm between theory and practice owing to the authors overstating "the effects of sustained collaboration on the construct of social presence". While Shea et al. (2010) contend that a CoI neglects two-way learning experiences, Annand (2011) suggests that a CoI overlooks uni-directional learning experiences. He contends that these can also lead to higher order learning. Moreover, Annand (2011) argues that research must compare bi and uni-directional learning within a CoI. To achieve this, he proposes that sub-categories of individual and collective learning be added to the social and teaching presences. This would enable researchers to measure their impact on the cognitive presence.

In response to Rourke and Kanuka (2009) review as detailed above, Akyol et al. (2009) whose work is also cited by Annand (2011), argue that deep constructivist learning processes inherent within a CoI should not be measured. They stress that a learning process cannot be measured as doing so objectifies learning. Furthermore, Garrison (2011) argues that a suggestion by Annand (2011) that the social presence in the CoI is over exaggerated is an erroneous claim. Garrison (2011) points out that Annand (2011) issues are coming from a distance learning standpoint, in which the predominant paradigm often holds little value for discourse/collaboration at the core of a CoI. Fundamentally, Garrison (2011, para 2) concludes it is not helpful to be critical of a CoI "from an incompatible paradigmatic perspective that is not congruent

with a context or for a purpose for which it was not intended". Nevertheless, Garrison (2011)acknowledges that social presence requires greater comprehension/refinements.

From a sociocultural lens, the constructivist or social-constructivist orientation that underpins a CoI framework, are value laden. As a consequence, assumptions are made regarding the identities of learners and what knowledge is valued (Wenger, 1998). Elwood (2008) explores issues encircling gender, assessment, and testing in education, and explains that while there is an emphasis on formative assessment in education, popular learning models discount the contexts which shape learning. Moreover, the relationship between learners and teachers are impacted. Stereotypical perspectives of learners' abilities/nature are projected onto learners by teachers and within research. To explain her ideas, Elwood outlines the relationship between mind, assessment, and learning in three different learning approaches and how these learning perspectives alter our views on gender. Elwood (2008) represents her ideas on a continuum, which is reproduced in figure 2.3 below (Elwood, 2008, p.88). Citing the work of Murphy (1999), Elwood (2008) explains that the first two stages/learning approaches included on this continuum are a symbolic view of cognition, and cognition that is situated. The third stage is a socio-cultural learning stance. Arguably, situated cognition, which is the second stage on continuum is pertinent as it underpins a CoI model discussed above. It is also the most common lens through which formative assessment is viewed (Elwood, 2008).

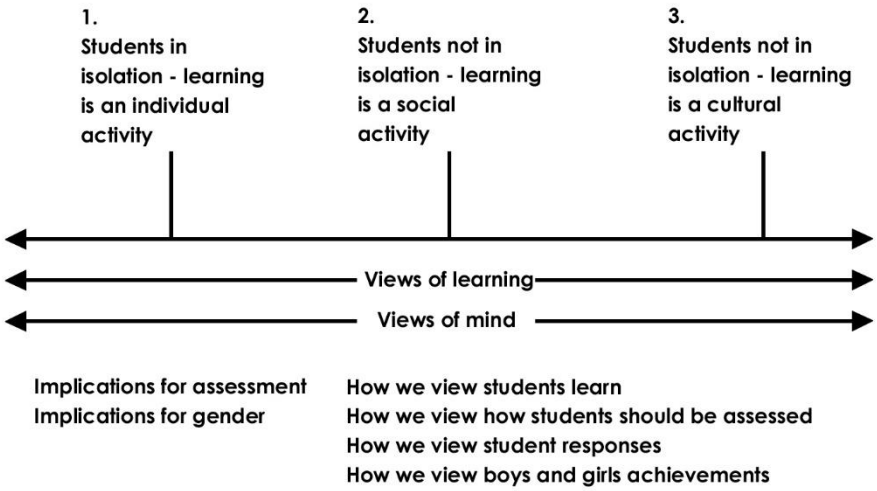


Figure 2.3 Reproduction of 'Continuum of views of learning, mind, assessment and gender' (Elwood, 2008, p. 88).

Stage 1 symbolic cognition estimates learners as separate from the environment. Learning is a representation with the individual mind whereby information is stored and recalled when necessary. Assessment itself is an isolated practice. Significantly, Elwood (2008) highlights that this learning approach homogenises learners' identities. Learners are generalised in research, and genders are conceived as fixed variables. Moving along the continuum, Elwood (2008) discusses socially situated cognition. Although social interactions are the centre of meaningful learning, she points out that meaning making is a cognitive process in which learners internalise knowledge derived from external sources. Knowing concerns learners' capabilities after a social interaction. The primary issue with this lens is that teachers' decisions regarding learners are influenced by their knowledge of learners' prior achievements rather than learners' potential. Elwood (2008) explains this issue in reference to the three-tiered GCSE that awards qualifications. From a social constructive perspective, teachers decide which level learners are suited to, based on

their assumptions surrounding learner abilities. Their choice steers the nature of curriculum that learners' experience and their future learning achievements. Furthermore, research is based upon on how boys and girls perform in these tests. This stereotypes learners' abilities through gender. Discussing the third stage, Elwood suggests that a socio-cultural lens is value neutral. This standpoint situates the mind in social activities between individuals. Learners cultural, historical, and social experiences steer learning experiences rather than what resides in their heads. Meaning, understanding, and knowledge are negotiated within cultural contexts of unique communities. Assessments aim to understand why learners respond in certain ways by considering their histories of experiences rather than what learners know.

Several social learning theorists agree that learning theories which discount the social and historical contexts that shape learning, fail to recognise identity and culture as unique. Discussing the "multidimensional problem" regarding learning theories, Wenger (1998, p. 4) explains that most approaches make claims upon what learning is relevant and this hinders a learning process/learning emergence. In practice, social learning theorist Wenger (1998, p. 269) argues that inclusive education centres upon learners' identities, giving learners "ownership of meaning" through a duality of reification and participation in learning communities. Wenger (1998) explains that when learning experiences/instruction, centers upon reified curriculum in isolation from practice, it serves those with prior experience of what is being studied. Wenger (1998) contends that many learning approaches fail to facilitate reflection and revision of learners' shifting perspectives that lead to meanings and new knowledge (Wenger, 1998). This reflective process is socially situated. It demands that the collective and individual be viewed as mutually inclusive. Wenger's (1998) construct of reality and knowledge removes the boundary between the subjective and

objective and facilitates what might be expressed as “epistemological adventurism" which are terms used in a title of an earlier paper by Wenger (1988). However, in contrast, dominant learning theories classify learning in either collective or individual terms (Giddens, 1971; Henkel, 2005; Wenger, 1998).

The unidirectional relationship within research paradigms addressed in the work of Usher (1996), can arguably be paralleled with both Elwood’s and Wenger’s perspective regarding the relationship between mind, learning, practice/assessments/ and identity or gender within divergent learning theories. Usher (1996, p. 9) similarly positions research in social processes/contexts and rejects the linear set of procedures within research paradigms that educational researcher often follow that reduce research to “’technology’”. To support this standpoint, he addresses the ontology and epistemology that underscores research paradigms. Usher (1996) takes aim at the objective ontology of the empiricist/positivist tradition that regards knowledge as predictable and generalisable through a set of procedures. He believes this closed view on reality is at ends with a social world in which knowledge is open and inconclusive. Usher (1996) is equally critical of a less popular interpretivist/hermeneutic research approach. This approach, he posits, is merely a reverse of positivism in that the subjective leads to the objective. Interpretivism differs from positivism in its focus upon meanings and perspectives and the necessity of social interactions between researcher and the participant. Rather than linear knowledge, knowledge is interpreting all meanings, which is simply "knowing *differently*” and is therefore normative (Usher, 1996, p. 13). Usher’s contention with a critical research paradigm that rejects objective knowledge, is that knowledge cannot be neutral as it is influenced by social interests. Essentially, all research paradigms make different claims over reality and knowledge when social contexts are impossible to determine. Usher

(1996), who assumes a postmodern lens on research, explains that knowledge of social phenomenon, events and processes cannot be determined. Knowledge is infused within distinct cultures and research processes are laden with values (Usher, 1996). Epistemology comes before ontology and knowing is the two directional relationship between the subjective and objective (Usher, 1996). In research, researchers must exercise reflexivity rather than use a paradigm to guide research.

In view of the similarities between the work of Elwood (2008) and Usher (1996) as outlined above, I have synthesised their work in figure 2.4. Figure 2.4 builds upon the reconstructed 'Continuum of views of learning, mind, assessment and gender' developed by Elwood, 2008, p. 88 in figure 2.3 above, and integrates the views of Usher (1996) regarding the ontology and epistemology underscoring research paradigms, his post-modern understanding of research that emphasises reflexivity and the two-way relationship between subjective and objective. These views held by Usher (1996) regarding research paradigms, are paralleled with the three represented learning theories presented by Elwood (2008).

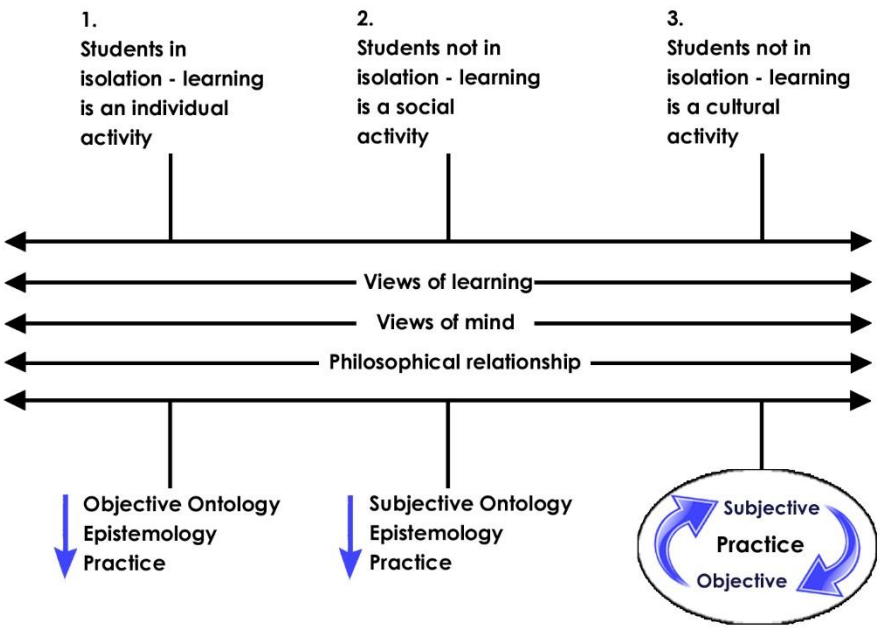


Figure 2.4 Reproduction of 'Continuum of views of learning, mind, assessment and gender' (Elwood, 2008, p.88), paralleled with Usher's (1996) views on research paradigms.

It is widely recognised that critical thinking ensues from self-reflection (Flores et al., 2012). Findings in this section raise questions surrounding the reflective processes, that are cognitively located within a CoI, that are suggested to lead to higher order thinking. Arguably, Wenger's (1998) social learning theory sheds light on the nature of reflective epistemology in teaching and learning, which as discussed by Kinsella (2010), lacks conceptual consistency. How meaning is negotiated through a "duality of participation and reification" from Wenger's (1998, p. 63) standpoint, sees the collective and individual as mutually inclusive. This facilitates new knowledge through a changing of perspectives (Wenger, 1998). Wenger identifies "paradigmatic trajectories" for renegotiating one's practice and identity within (Wenger, 1998, p. 156). These are multitudinous and form a "continuous motion" (Wenger, 1998 p.154).

2.5.2 TPACK

An alternative framework designed for learning with technology is Technological Pedagogical and Content Knowledge (TPACK) (Thompson & Mishra, 2007). It is a revision of its original description as 'TPCK', and was developed to improve clarity (Koehler & Mishra, 2005). Several hundred studies employ this framework to investigate the manner in which educators integrate technology during their practice (Phillips, 2016). Koehler and Mishra (2005) recognised that new technologies in education were a potential means of enriching practice. They also were aware of the constraints surrounding effective technology integration such as the shifting and often complex nature of technologies. Furthermore, technology integration amongst educators was varied, some being more innovative than others. They link this to teachers' beliefs about technology, their levels of expertise, and the

nature of professional learning development available to them. This prompted Koehler and Mishra to develop the TPACK framework. Whilst recognising the fluid nature of learning and technology, Koehler and Mishra (2005) believe that in both learning experiences and in professional development there are different domains of knowledge that educators must be aware of when integrating technology. Their understanding of technology refers to all forms of technology in any learning environment.

At the core of TPACK is Shulman's (1986) concept of "Pedagogical Content Knowledge" the distinct categorisation of knowledge of especial significance to educators (Shulman, 1986, p. 9). Shulman (1986) suggests that PCK helps faculty relate pedagogic knowledge with content knowledge. This increases their understanding of "how particular topic, problems, or issues are organized, represented, and adapted" to the needs of diverse learners, and subsequently pedagogically presented (Shulman, 1987, p. 8). Integrating technology into Shulman's model, Koehler and Mishra (2005, p.134) go further by suggesting that a "dynamic, transactional relationship" exists between technology, pedagogy, and content. This constitutes the nature of knowledge that educators require to teach with technology. They situate this interplay within unique classroom learning contexts (Mishra & Koehler, 2008). Educators must also be knowledgeable of learners' issues, epistemological viewpoints, and prior knowledge. Technology integration builds upon these understandings, to "develop new epistemologies or strengthen old ones" (Mishra and Koehler, 2008, p.10). For this process to ensue, all three components (TPACK) must be considered collectively rather than in isolation as illustrated in figure 2.5 (Thompson & Mishra, 2007). It is at this point where technologically supported learning facilitates new learning to emerge, hence critical thinking.

TPACK is rooted in constructivism. Koehler, Mishra, and Cain (2013) contend there is not a single most effective way of using technology integration. Rather, effective design with technology is interconnected with the contexts of classrooms and subject/content area. This contrasts with a CoI, whose authors argue that learning is immeasurable. Nonetheless, the authors claim that TPACK is best enacted through socio-constructivist or constructionist pedagogic approaches. For example, in their introductory article Koehler and Mishra (2005, p. 148) test the efficacy of this framework amongst a group of master's students and faculty who create an online course through a constructionist "learning by design approach". While advocating this approach, they also suggest problem-solving approaches that align with social constructivism.

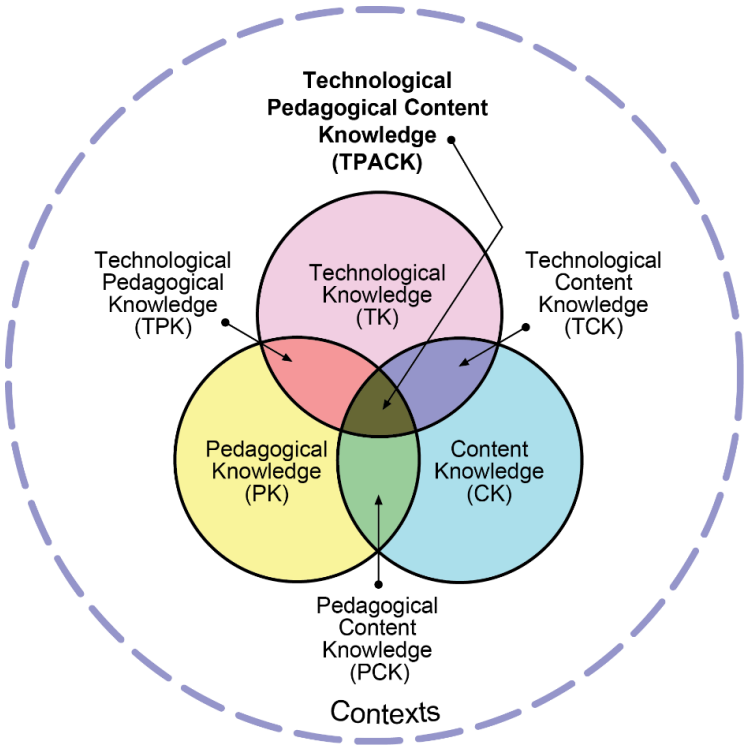


Figure 2.5. The TPACK Image. Reproduced by permission of the publisher, © 2012 by tpack.org. (Source http://tpack.org). (Koehler & Mishra, 2011).

There is a lack of conceptual consistency surrounding the nature of TPACK despite its widespread adoption owing to the ambiguous nature of components within the framework. The consequences of this as identified by Voogt, Fisser, Pareja Roblin, Tondeur, and van Braak (2013), is that TPACK enactment can differ with varying learning lens held by those employing the framework. This may impact negatively upon the nature of learning experiences and learning outcomes. Voogt et al. (2013) identify the widely contested nature of TPACK following an analysis of 55 peer review book chapters and journal articles citing the framework between 2005-2011. Three overarching understandings emerge. These include technology as an add on to PCK, TPACK as a body of unified knowledge, and TPACK as interdependent elements. Voogt et al. (2013) conclude that researchers personal learning beliefs steer how they employ the framework. It also suggests a lack of clarity regarding the framework's constructivist underpinning. There are also reported repercussions concerning practice, whereby a large volume of researchers utilise TPACK to deterministically measure teachers' knowledge of specific types of technology. Voogt et al. (2013) list just nine articles that consider all technology in their research and of these seven were co-authored by Mishra and Koehler. This symbolic cognitive perspective is contrary to a belief held by Mishra and Koehler (2005) that all technology must be considered. Lastly, Voogt et al. (2013) identify a consensus that PCK is at the core of TPACK. However, most are unclear of the nature of PCK. This conceptual uncertainty is a longstanding issue within PCK (Abell, 2007; Kind, 2009).

The TPACK framework in its current form is arguably limited as it fails to fully depict the social and historical contexts that continuously shape learning. Specifically, the issue lies within the relationship between TPACK and contexts. Debatably, the framework fails to support knowledge development or learning that is

socially situated within communities of practice (Wenger, 1998), and instead the framework depicts contexts as understandings of learner's prior knowledge. As previously discussed by Elwood (2008), this understanding of learning can result in educators making assumptions about learners' identities, such as capabilities and learning needs. For instance, a recent case study by Phillips (2016) is prompted by a scarcity of research that explores the relationship between TPACK and contexts, particularly research that considers the enactment of TPACK through a socio-cultural lens (Cox, 2008). Phillips (2016) explores the TPACK of ten post-primary educators in a school in Australia over a ten-month period. Findings reveal that teachers TPACK performance is steered by the processes of practice and identity negotiation, and not just physical environments as proposed in TPACK. In a similar vein to Elwood (2008), Phillips (2016, p. 555) challenges the frameworks estimation of knowledge as "epistemological possession" something that resides in individuals' heads. Highlighting that the framework is conceptually weak, he modifies the TPACK model to include the "processes of identity development and practice" within the contexts of the original TPACK framework (Phillips, 2016, p.567). Including these elements, he argues, will enable researchers to explore how TPACK emerges within a CoP (Phillips, 2016).

Arguably, the incompatibility between TPACK and socio-cultural learning, can be traced to its foundations; PCK. As established by Voogt et al. (2013), while all researchers agree that PCK is central to TPACK, they lack conceptual understanding of PCK. Debatably, this is the root of the contested nature and application of TPACK. The following addresses the epistemic issues within PCK through a situated learning lens, which are suggested to be at the root of the ambiguity encircling PCK. The work of Etienne Wenger, Deborah Loewenberg Ball (and colleagues), and Robin Usher

frame this discourse. By elucidating upon the issues pertaining to PCK, the problem with the TPACK framework becomes clearer. Rather than attempting to unravel the nuanced inter-connections between pedagogy, content, technology, and contexts as proposed in the TPACK framework, arguably the focus must be on supporting the dynamic relationship between collective and individual identities within a community of practice to facilitate a learning process.

In view of the limitations of the TPACK model in supporting situated social learning processes within a CoP, I propose in what follows that TPACK and CoP can be amalgamated to build an extended model. This amended model illustrates the intertwined relationship between individual/ collective identities during the process of learning, with or without technology. This differs slight from Phillips (2016) who integrates practice and identity into the contexts of the original TPACK framework to enable its emergence within a CoP. Furthermore, I integrate a CoP and the PCK to address the conceptual issues relating to PCK that are discussed below. Following this, PCK is integrated into a table by Bucci (2002). The table in its present form developed by Bucci (2002) parallels paradigms of research with learning and teaching practice to improve understanding of the nexus between epistemology, ontology and practice (positivist, interpretivist, critical). I propose modifications to this table that will anecdotally further understanding of PCK, and thereby TPACK through a social lens. More significantly, this table helps promote faculty understanding of social learning within a CoP (Wenger, 1998). This amended table is important considering research reports that faculty are sometimes insensitive to the nature of their personal learning theory (De La Harpe & Peterson, 2009). Studies also report a finite level of philosophical knowledge amongst faculty (MacKeogh & Fox, 2009).

Shulman (1986) identifies concept "Pedagogical Content Knowledge" (PCK), as the distinct categorisation of knowledge of especial significance to educators (Shulman, 1986, p. 9). It is one of three classes of content knowledge he considers imperative for educators to have, which has received the most attention. The concept of PCK is developed to help faculty obtain closer alignment between theory and practice (Loewenberg Ball, Thames, & Phelps, 2008). It relates pedagogic knowledge with content knowledge, which increases understanding of "how particular topic, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction" (Shulman, 1987, p. 8). Aligning with TPACK, PCK claims to facilitate understanding across disciplines. However, as already explained, PCK is conceptually ambiguous. In a similar vein to Phillips (2016), this section attempts to address the conceptual limits of PCK.

An overarching focus of the work of Deborah Loewenberg Ball (and colleagues) revolves around knowledge in the teaching of mathematics. Among the issues Ball, Lubienski, and Mewborn (2001) identify with education in maths, are fixed assumptions surrounding learning and knowledge. For instance, a recent conference paper by Ball (2017) explains that there can be an emphasis upon measuring the level of knowledge that teachers possess, which overlooks the role that a teacher plays in relation to teaching and its significance concerning learning amongst students. Essentially, employing tools for assessment of teacher practice is predicated upon cognitive and individual standpoints and fails to consider those teaching mathematics through a sociocultural lens (Ball, 2017). Ball (2017, p. 11) explains that teachers require "mathematical knowledge for teaching" to help learners with developing their "mathematical skills, ways of thinking, and identities" within "classrooms as equitable communities of practice". To unpack the notion of maths

teaching viewed through a practice lens Ball (2017, p. 16) references the 'instructional triangle' which she explains was developed in earlier work (Cohen, Raudenbush, & Ball, 2003, p. 124). This is clear in figure 2.6 below, as presented in Ball (2017, p. 16). Discussing this, Ball (2017, p. 15) explains that the teaching of maths is "co-constructed in classrooms through a dynamic interplay of relationships, situated in broad socio-political, historical, economic, cultural, community, and family environments" construction involves the interpretations and interactions between content, learners and teachers" (Cohen et al., 2003, p. 124).

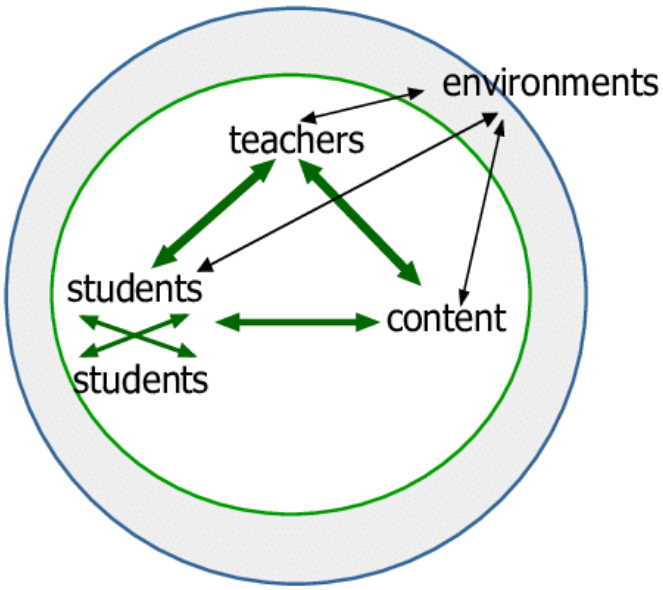


Figure 2.6 Instructional triangle (Ball, 2017, p. 16; Cohen et al., 2003)

Whilst acknowledging the merits of Shulman (1986) PCK model, Ball, Thames, and Phelps (2008), note the model is restricted in its usefulness since it lacks empirical and definitional underpinnings. Discussing PCK in terms of mathematic teachers, Ball (2000, p. 246) explains that PCK connects maths knowledge with pedagogical, learners and learning knowledge. However, it falls short in offering an understanding/knowledge of the maths knowledge necessary for the practice of

teaching (Ball, 2000), or "mathematical *knowing and doing* inside the mathematical work of *teaching*" (Ball, 2017, p. 453). Ball et al. (2008) address the empirical shortcomings of PCK suggesting that the model must be mapped and measured rather than taken as is. To achieve this, Ball et al. (2008, p. 389) develop "a practice-based theory of content knowledge for teaching" founded upon Shulman's (1986) PCK concept. In their study investigating "Mathematical Knowledge for Teaching", Ball et al. (2008, p. 394) stress that rather than asking what knowledge teachers ought to have, a better targeted question might be "what does effective teaching require in terms of content understanding?". Their study centres upon "the nature of professionally oriented subject matter knowledge" in maths education (Ball et al., 2008, p. 389). It involves a qualitative analysis of the emerging mathematical issues in the teaching of math's in everyday practices. Founded upon hypotheses from an analysis of teaching, measures of "mathematical knowledge for teaching" are also generated (Ball et al., 2008, p. 390). Findings identify two subdomains of PCK as empirically perceivable. These include knowledge relating to "content and students" along with "content and teaching" (Ball et al., 2008, p. 389). Significantly, the authors also uncover a further subdomain. This is ""pure" content knowledge" specific to teaching practice which they term unique "specialized content knowledge (SCK)". In outline, SCK concerns the skills and knowledge appertaining specifically to mathematical teaching, and solely required for the everyday practices of teaching.

In agreement with Ball, the PCK model fails to properly address the situated nature of teaching/learning. Within the 'content knowledge' component of PCK, one of the four primary sites Shulman identifies where "teaching knowledge base" is constructed, is "Scholarship in content disciplines" (Shulman, 1987, p. 8). Underlying "content knowledge" are two primary constituents. These are the "accumulated

literature and studies in the content areas" and "the historical and philosophical scholarship on the nature of knowledge" in a subject area (Shulman, 1987, p. 9). With regards the latter, Shulman (1987, p.9) stipulates that educators must be familiar with and hold the ability to construe the "the accepted truths in a domain" and also be aware of the "alternate theories of interpretation and criticism" pertaining to the subject content being taught to support learning. In agreement with Ball (2017, p.11) the role teachers must play, be it maths as the authors suggest, or any other discipline, is developing learners their "skills, ways of thinking, and identities" within "classrooms as equitable communities of practice". However, the PCK model fails to facilitate faculty command of social learning within a CoP. To be specific, it fails in achieving this crucial aim of supporting faculty understanding of all "theories of interpretation" (Shulman, 1987, p. 9). As foregrounded in the work of Usher (1996, p. 9) discussed above, the linear set procedures within research paradigms that educational researchers often follow reduce research to "'technology'". A subjective or objective ontology steers epistemology resulting in objective knowledge which directs what knowledge is important. This one-way relationship can be seen within the PCK model as illustrated in figure 2.7. Epistemological knowledge which is a component of "the historical and philosophical scholarship on the nature of knowledge" (Shulman, 1987, p. 9) directs how educators assess content material (Noddings, 2007). In turn, this helps to decipher what pedagogical approaches, or 'Pedagogical Knowledge' (PK) are most appropriate to represent the 'Content Knowledge' (CK), thereby providing faculty with 'Pedagogical Content Knowledge' (PCK). In sum, while PCK supports comprehension of a large number of paradigms, it may not be as effective in developing understandings of social learning within a CoP. Essentially, 'Pedagogical Knowledge' (PK), 'Content Knowledge' (CK) and 'Pedagogical Content Knowledge'

(PCK), must be negotiated by a learning community and be amenable to continuous change. Along the same lines as Ball (2017), I argue that to facilitate faculty understanding of learning within a CoP framework, the original model of PCK must include the voice of the community of learners.

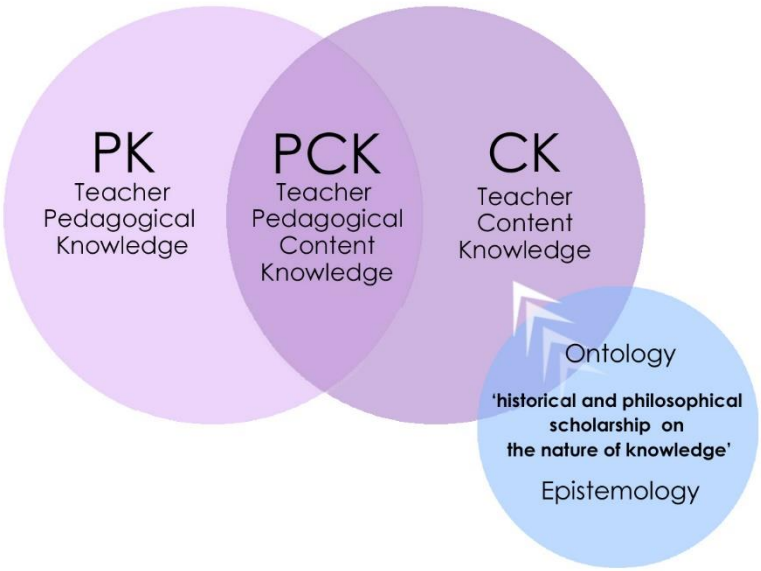


Figure 2.7 Reconstruction of Pedagogical Content Knowledge Model, in which I have included a representation of "the historical and philosophical scholarship on the nature of knowledge" constituent of content knowledge (Shulman, 1987, p. 9)

I propose that the original concept of PCK be expanded, whereby the voice of the learning community is made more central and explicit. Ball (2008, p.389) develops a "practice-based theory of content knowledge" through empirical research founded on a need to understand knowledge needed for everyday practices of maths teachers. Differing slightly from this, the amended PCK model in figure 2.8 below, interconnects Wenger's (1998) (CoP) with (PCK) to illustrate learning in communities of practice. Anecdotally, the amended model the integrates PCK and CoP, might offer theoretical insight into the situated nature of PCK to teachers across all disciplines. It is widely acknowledged by researchers that the voices of learners are instrumental in generating transformational social learning educational experiences (Archer, 2008;

Henkel, 2005; Lave & Wenger, 1991; Rogoff, 1990; Wenger, 1998). Learner feedback supports deeper learning experiences by enabling learning and teaching to be mutually informing (Ramsden, 1992). The integration of learners' voices into the prototypical PCK model ensures that PCK can be considered through a social learning lens. In its current form, PCK as a concept for aiding faculty in their understanding of effective practices within a CoP is ineffective. Arguably, this issue is also applicable to TPACK. Ultimately, CoP's are democratic in their allocation of power. This trait is fundamental in arriving at credible decisions concerning teaching and learning (Kapucu, 2012; Polin, 2010). At the same time the role of faculty within a CoP must involve a degree of leading insofar as overseeing the learning communities' activities as highlighted by (Kapucu, 2012; Wenger, 2000). This is to ensure that teaching and learning experiences align with the goals of the community of learners. To achieve this goal learner feedback must be incorporated into the original PCK model. It must continuously inform faculty' epistemological knowledge regarding the nature of PK, CK and PCK that is best suited to a particular learning experience. This is an element of the aforesaid "historical and philosophical scholarship on the nature of knowledge" (Shulman, 1987, p9). Hence learning experiences will accurately reflect the learning communities shifting values and practice. This process must always be an interactive process between learner and faculty. This way a community collectively deciphers the appropriate PCK for a learning experience.

Figure 2.8 presents a 'Community Perspective on Pedagogical Content Knowledge (CPPCK) and is developed to reflect the aforesaid perspective. Additions to the PCK model, make the model more conceptually appropriate to social learning across all disciplines. A 'Community Perspective' (CP) overlaps with Shulman's 'Pedagogical Knowledge' (PK) to generate 'Community Perspective on Pedagogical

Knowledge' (CPPK). Similarly, 'Community Perspective' (CP) overlaps with Shulman's 'Content Knowledge' (CK) 'to produce 'Community Perspective on Content Knowledge' (CPCK). Lastly, 'Community Perspective on Content Knowledge' (CPCK) and 'Community Perspective on Pedagogical Knowledge' (CPPK) overlap to produce 'Community Perspective on Pedagogical Content Knowledge '(CPPCK). The concept of 'CPPCK' enables faculty to connect the learning community's perspective on pedagogic knowledge with their perspective on content knowledge. This facilitates faculty understanding of their collective preferences in relation to the manner in which "particular topic, problems, or issues are organized, represented, and adapted" to their "diverse interests and abilities" (Shulman, 1987, p. 8) and their preferences regarding teaching employed to support learning if required.

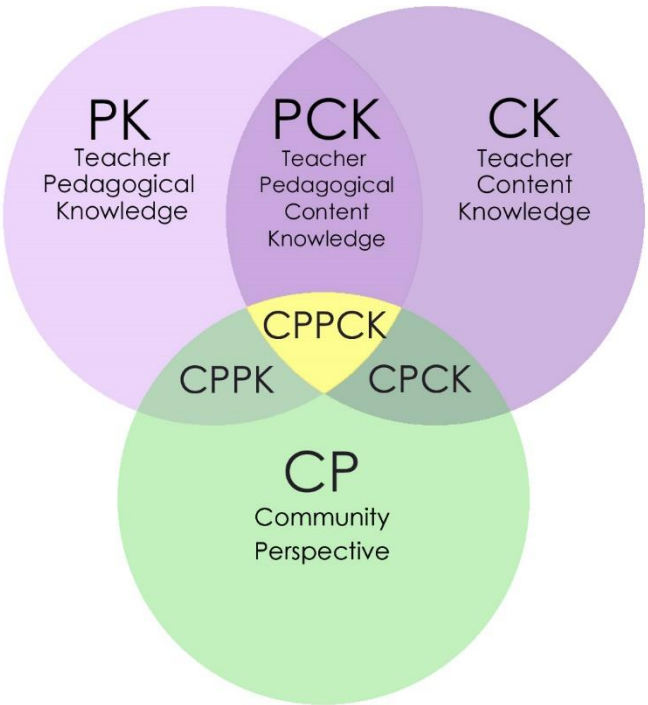


Figure 2.8 Community Perspective on Pedagogical Content Knowledge (CPPCK)

The community perspective is the missing component regarding learning with technology in the TPACK framework. In view of this limitation, I integrate learning voices into the interplay of TPACK as presented in figure 2.9, to illustrate the mutually inclusive relationship between individual/collective identities. This differs from Phillip's (2016) additions to the TPACK model in which Phillip's (2016) includes the terms "'processes of identity development and practice' to the notion of 'contexts' as factors influencing teachers' TPACK enactment" in the original TPACK model (Phillips, 2016, P.567). I have integrated TPACK and a CoP, to build the following extended model in figure 2.9. A community perspective (CP) is integrated into TPACK, to form CPTPACK. These modifications facilitate the negotiation of TPACK during practice by learners. It also supports knowledge of learning without technology which makes it more attractive to socio-cultural theorists.

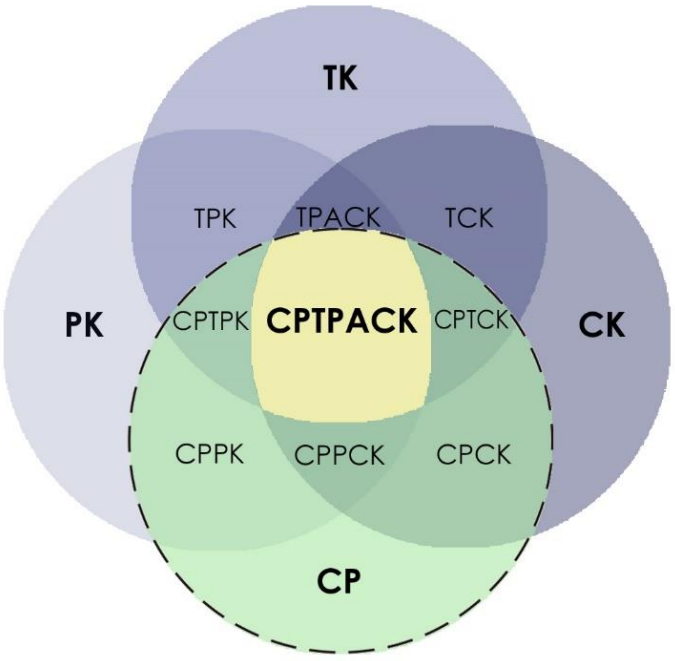


Figure 2.9 Community Perspective on Technological Pedagogical Content Knowledge (CPTPACK)

Educational philosophy or what Shulman (1987, p.9) terms the "the historical and philosophical scholarship on the nature of knowledge", are key guiding elements in both PCK and the newly conceived CPPCK and CPTPACK models. It guides faculty understanding and actions during practice. Nonetheless, it can be difficult for faculty to grasp a thorough understanding of philosophy, particularly the nature of ontology and epistemology. Therefore, it is essential to explore ways in which this principal constituent of PCK, CPPCK, and TPACK, might be made explicit. The following integrates PCK into a table developed by Bucci (2002). I propose that this extended table will promote understanding of PCK, and also bolster socio cultural critiques of the TPACK model.

Bucci (2002, p. 76) created a concept he terms "Paradigm Parallel Pedagogy" and represents the notion in a table entitled 'Paradigm Pedagogy Definitions' (p.77) that is reconstructed in table 2.1 below. This table links pedagogy with paradigmatic structures. Different teaching outlooks are contrasted with "ontology, epistemology, and methodology", the main components of paradigms (Bucci, 2002, p. 77). The purpose of this table is to grow faculty understanding of the connection between teaching, learning and educational philosophy. Mirroring the issue inherent in TPACK and PCK, Bucci's' table may not be as effective in promoting understanding of social learning theory. Following modifications, it is proposed that this table could help further understanding surrounding the nature of PCK and social learning theory.

Table 2.1 Reconstruction of 'Paradigm Pedagogy Definitions' (Bucci, 2002, p. 77)

	Ontology	Epistemology	Methodology
Definition	What is the nature of the reality of the delivery of content concepts and student learning and discipline?	What is the relationship between the teacher and the student?	How do the students in the class seek out knowledge? What is the delivery method of the teacher?
Positivism	• product over process • masterable content • content knowledge stressed	• teacher as a giver of knowledge • students are passive recipients	• teacher directed • objective assessments • knowledge is given
Interpretivism	• process over product • unlimited content • individualism stressed	• teacher-as-facilitator • student directed learning • teacher encourages student-taught lessons	• student directed • subjective assessments • knowledge is constructed
Critical Theory	• process/product shared • content and society impose inequalities • emancipatory ideas stressed	• teacher-as-coach • teacher is higher knower but encourages students to follow their lead	• teacher and student directed • objective, subjective, and alternative assessments • knowledge is accessible

Considering the current limitations with '*Paradigm parallel pedagogy*', social learning theory in CoP (Wenger, 1998) is integrated into the reproduced Bucci's table in table 2.1 above, to build the extended table 2.2 below. The "historical and philosophical scholarship on the nature of knowledge" a primary constituent of Shulman's (1987) 'Content Knowledge' is aligned with the ontology and epistemology component of 'parallel paradigm pedagogy'. Likewise, 'Pedagogical Knowledge' is paralleled with the methodology component in Bucci's table. Furthermore, social learning theory and learning within CoP are incorporated into this

table to build faculty understanding. Lastly, to further faculty understanding of the newly developed concept CPPCK on Pedagogical is integrated into this table. A section is introduced above social theory, whereby the "historical and philosophical scholarship on the nature of knowledge" (Shulman, 1987, p.9) is amalgamated with a 'Community Perspective on Content Knowledge' (CPCK), and listed alongside ontology and epistemology, and a 'Community Perspective on Pedagogical Knowledge' (CPPK) is arranged in line with methodology of social learning theory.

Table 2.2 'Paradigm Pedagogy Definitions' (Reconstructed) (Bucci, 2002, p. 77), now integrated with elements of social learning theory (Wenger, 1998), PCK (Shulman, 1986,1987) and CPPCK.

PCK	**Content Knowledge** "historical and philosophical scholarship on the nature of knowledge "constituent. (Shulman,1987, p. 9)		**Pedagogical Knowledge**
	Ontology	**Epistemology**	**Methodology**
Definition	What is the nature of the reality of the delivery of content concepts and student learning and discipline?	What is the relationship between the teacher and the student?	How do the students in the class seek out knowledge? What is the delivery method of the teacher?
Positivism	• product over process • masterable content • content knowledge stressed	• teacher as a giver of knowledge • students are passive recipients	• teacher directed • objective assessments • knowledge is given
Interpretivism	• process over product • unlimited content • individualism stressed	• teacher-as-facilitator • student directed learning • teacher encourages student-taught lessons	• student directed • subjective assessments • knowledge is constructed
Critical Theory	• process/product shared • content and society impose inequalities • emancipatory ideas stressed	• teacher-as-coach • teacher is higher knower but encourages students to follow their lead	• teacher and student directed • objective, subjective, and alternative assessments • knowledge is accessible
CPPCK	**Community Perspective Content Knowledge** "historical and philosophical scholarship on the nature of knowledge" (Shulman,1987, p. 9)		**Community Perspective Pedagogical Knowledge**
	Ontology	**Epistemology**	**Methodology**
Social Learning Theory (Wenger, 1998)	• process (collective and individual) • people are social • knowing concerns actively participating in the social world • learning is the producer of identity/meaning	• no hierarchy between teachers and learners • teaching is itself a learning resource • role of teacher is to guide/support a learning process	• learners actively socially co-participate in a community and practice and learning emerge • learners' accountability is to the community "regime of competence" (Wenger, 1999, p.136) • knowledge is dynamic changes as community perspectives shift

2.5.3 Communities of Practice

The concept of social learning within CoP is a further framework employed to support learning in online environments. However, it has not reached the same level of recognition in digital learning research and practice as TPACK or CoI. Lave and Wenger (1991) pioneered the situated learning movement by locating learning in situations of co-participation within communities of practice (Jonassen & Land, 2012). However, it is Wenger (1998) later work regarding CoP that has gained considerable recognition as a means of supporting learning in face-to-face learning environments, or within virtual environments which he terms 'digital habitats' (Wenger et al., 2009). Wenger (1998) discerns learning as a social process identical to all. He removes the boundary between the individual and the collective and argues that learning is the dynamic interplay of both and how they connect with the world (Murphy & Ivinson, 2003; Wenger, 1998). Discussing the CoP framework, he explains that learning is a process of active social participation in the "*practices* of social communities and constructing *identities* in relation to these communities" (Wenger, 1998,p.4). It is framed by social and historical elements (Wenger, 2010, p. 164). Meaning, practice, and identity emerge via the constant (re)negotiation of our own experiences with the experiences of other members of a community. As we learn, meanings emerge. This is the nature of practice and of identity. The lines between formal and informal learning, institution and beyond, and theory and practice are blurred. A functional CoP is comprised of three constituents. A domain is an interest shared by a community, practice is how a community develops its knowledge, and community is a group of learners (Wenger,1998).

Wenger (1998) posits that four dualities support a community of practice framework. Of these, a "duality of participation and reification" concerns the process

of meaning making (1998, p. 63). At the nucleus of this duality where participation and reification converge, lies the crucial element within a CoP (Coverdale, 2009). This is where meanings are processed (Wenger, 1998). This duality facilities reflection and revision of perspective, and consequently the (re)emergence of new learning. Over time, a combined learning history or "regime of competence" develops within a community for which members are answerable to (Wenger, 1998, p. 141). Their level of proficiency in relation to this regime is what represents knowing. Identity is formed in relation to this regime when "ownership of meaning" is achieved (Wenger, 1998, p. 200).

Virtual environments support a communities' togetherness via the "intertwined evolution of domain, community, and practice" (Wenger, White, & Smith, 2009, p.11). However, their use depends on the emergent needs of a community (Wenger et al., 2009). Wenger et al. (2009, p.20) argue that a CoP has "Shared DNA" with Web 2.0. Similar to a CoP, technology can facilitate interaction and connectedness and a "balance between independence and interdependence". Meaning making is the same process in online spaces. Participation is necessary for "depth, extent, and impact" and reification for meaningful negotiation of what a community is sharing (Wenger et al., 2009, p.58). What counts is our learning lens. If digital environments are desired by a community, educators must be able to see the "community in technology" and technology through a community lens. Doing so demands that faculty assumes a new role of "technology stewardship" with "*new functions, practices and identity*" to support the intersection of learning technology and learning communities (Wenger et al., 2009, p. 23). Faculty must ensure that online learning communities flourish. They oversee learners' transition to, and adoption of technology. Among their competencies must be a balancing of polarities that include

the aforesaid duality of participation and reification. Maintaining a 'rhythm' between "togetherness and separation" that concerns synchronous and asynchronous is equally important (Wenger et al., 2009, p. 56). Lastly the interplay between individual/ collective identities must be monitored so they do not "not imply, require, or produce homogeneity" (Wenger et al., 2009, p. 58). Stewarding also involves configuring technology and selecting technology appropriate to the needs of the communities. Essentially, faculty are the key enablers to the identity renegotiation of learners.

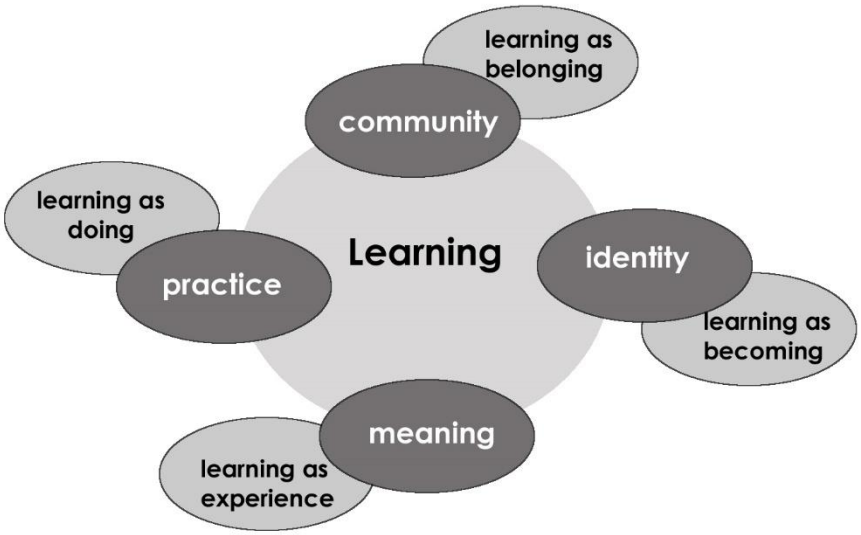


Figure 2.10 Components of a social theory of learning: an initial inventory (Reconstructed).

(Wenger, 1998, p. 4)

Despite the potential merits of learning in CoP, the framework is not without its critics. For instance, socio-constructivist activity theorist Engeström (2007) who is one of Wenger's leading critics maintains the CoP framework is limited. Engeström (2007, pp. 1,3) argues that Wenger's interpretation of community is "ahistorical" and "overlooks the history of oppression" that are oftentimes a characteristic of hierarchies within workplaces. Engeström (2007) traces this issue to Lave and Wenger's (1991) notion of learning through 'legitimate peripheral participation'. Engeström (2007)

criticises the inward-type movement that occurs during this process whereby an apprentice gradually moves from the periphery and the status of novice to a fully-fledged community participant who assumes the title of master. He believes that it accepts a hierarchal relationship between a master and apprentice, by failing to recognise rebellions between apprentices and their masters. The master has ownership of authority and skill. At the same time, Engeström (2007) acknowledges that Wenger (1998) reconceptualised work surmounts a number of these issues. For instance, Wenger goes further by identifying the connected nature of communities though penetrable boundaries. However, Engeström (2007) regards Wenger's portrayal of community as ambiguous whereby the nature of practices (tasks) of a community are reliant upon participants unique perspectives. Engeström argues that the abstract nature of community means that CoP are difficult to enact in workplaces, and Wenger fails to explain how CoP might be implemented under such conditions. This prompts Engeström to consider newer forms of community learning that he believes more effectively address issues of oppression.

The process of social production within the recent software development open-source movement is, from the perspective of Engeström (2007), a representative example of how community learning might deal with issues of oppression. Engeström (2007) explains that acceptance into these communities is based upon participants being activists rather than the nature of their qualifications, and thereby removes workplace hierarchies. At the same time, the goal of these communities is learning unconnected with commercial ends, which Engeström (2007) believes opens-up the potential for innovation or emancipatory outcomes. Engeström (2007) uses 'mycorrhizae' as a metaphor to describe this new form of social production. Mycorrhizae is a fungus on the root of a plant, which through a process of 'symbiotic

association' with its environment, provides nourishment via the root to a plant that helps it to flourish. Engeström (2007) aligns elements of this process with his activity theory and presents them on a framework for organisations to view social production through. The framework delineates learning as a symbiotic process of networked/collaborative knot-making (knowledge co-configuration amongst connected knowledge-makers), who are focused upon a "runway object" (Engeström, 2007, p.9). In accord with Engeström's (2007) activity theory, the object is all important as it has the potential to be either emancipatory in nature or generate negative effects. Viewed through the lens of mycorrhizae the object is minimally controlled and this increases the potential for innovative and emancipatory effects. It is the relationship between objects and communities that engenders a division of labours, as is the nature of social production. Engeström (2007) contends that the object, and in particular its connection with mediation within the community, is what lacks within a CoP. Despite this shortfall, Engeström (2007) acknowledges the merits of Wenger's work. He notes that CoP has amounted considerable acclaim as a framework for learning design and management of knowledge in education and across organisations.

A further critique of Wenger, Cox (2004), reviews four influential works on communities of practice. Discussing Wenger's (1998) concept of ongoing collaborative meaning making in CoP, Cox (2004, p.7) claims that it overlooks "the powerful rationalising processes in capitalism" that are embodied in 21st century workplace conditions. Building upon the work of Eraut (2002), Cox (2004) describes workplaces as competition driven, under rigid management control, and highly individualistic with a tight hierarchal relationship between individuals and their managers. Both the nature and process of accomplishing a task are generally

prescribed. Working environments can be spatially fragmented, experience a high staff turnover, are subject to regular reorganisation, and rely heavily upon computers for mediation. Most importantly, present-day working conditions "rapidly appropriate and systematise understanding" and "wider discourses" steer local understandings (Cox, 2004, p.7). Collectively, these conditions are overlooked by Wenger who identifies relationships within CoP as fluid and who fails to clearly define the nature of practice or tasks. For this reason, Cox (2004) feels it is highly unlikely that profit driven managers will support the development of CoP. Instead, Cox (2004) suggests that CoP may perhaps be more amenable to industries contingent upon innovation and problem solving (the ideal learning outcomes identified by Wenger). Cox (2004) also critiques Wenger's account of the term community and regards it at odds with historic delineation of the term. The "residual problem" is that whilst community implies cohesion, helpfulness and gravity in numbers, Wenger highlights that communities are not always positive and effective (Cox, 2004, p. 8). Nonetheless, despite Cox's (2004) criticism of CoP he acknowledges Wenger's progressive thinking. Cox (2004, p.7) considers CoP extremely useful as an "ideal type" whereby connections are generated through practicing jointly. Cox (2004) also parallels CoP with recent shifts in sociological thought, explaining that this revised thinking sees that individuals identify differently with contexts, recognises community boundaries as blurred, and considers community cultivation to be a noteworthy accomplishment.

Hodkinson and Hodkinson (2004) contend that Lave and Wenger (1991, p.29) original notion of 'legitimate peripheral participation' within CoP does not consider issues of power and class and is therefore unsuited for use in workplaces. For this reason, they suggest that it must be either built upon or moved beyond. One issue with 'legitimate peripheral participation' from Hodkinson and Hodkinson (2004)

standpoint, is that it does not address how non-newcomers to a CoP learn. Moreover, Hodkinson and Hodkinson (2004) point out that Lave and Wenger (1991) do not sufficiently address the nature of community, which can be fragmented socially or spatially. Hodkinson and Hodkinson (2004) also problematise the broad definition of a CoP, which they argue is contradictory to Laves and Wenger's (1991) description of practice within tight boundary enclosed communities. Essentially, Hodkinson and Hodkinson argue that two different types of communities can be seen in Lave and Wenger (1991) work, and that the authors disregard wider communities in a field. Hodkinson and Hodkinson (2004) recognise that Wenger's (1998) reconceptualised work surmounts some of these issues. For instance, they note that Wenger goes further by identifying the connected nature of communities though boundary processes, and the unclear boundaries between communities. However, Hodkinson and Hodkinson (2004) feel that Wenger (1998) does not address the identity of workers or specify how persons of varying levels within a CoP learn. At the same time, Hodkinson and Hodkinson (2004) maintain that Wenger's (1998) differentiation between learning communities where effective learning occurs, and CoP as essential for learning, is ambiguous. Hodkinson and Hodkinson (2004) conclude by suggesting a return to an earlier broader definition/understanding of CoP which they feel holds greater promise in addressing workplace issues. However, to address its shortfalls/limitations there is a need to rework it and build upon boundary work.

Kontio (2015) reviews a recent book by Wenger-Trayner, Fenton-O'Creevy, Hutchinson, Kubiak, and Wenger-Trayner (2014) that addresses learning across different landscapes. Whilst Kontio (2015) believes that the authors deal in part with the limited emphasis on newcomers learning in CoP in previous work, similar to Hodkinson and Hodkinson (2004) she claims that the authors disappoint by not

considering political learning dynamics or issues of power. The first of three sections in Wenger-Trayner et al. (2014) book, develop upon learning as meaning making and identity, to include a dimension of learning as producing identity across learning trajectories in several different learning landscapes. However, Kontio (2015) suggests that is nothing new. On the other hand, Kontio (2015) commends the authors consideration of the student, who she signals must manoeuvre boundaries/different learning trajectories between workplace learning and learning in formal education. Wenger-Trayner et al. (2014) also discuss the vital role of leaders or 'convenors' of systems, which Kontio (2015) considers noteworthy. Convenors ensure that new learning comes about by recognising/creating the conditions/supports to enable learning across boundaries/landscapes. However, Kontio (2015) finds fault with a dearth in practical examples of the nature of convenors, strategic approaches, and tools. In sum, though (Kontio, 2015) is critical of Wenger's work, she acknowledges that CoP are iconic. They are highly cited, hugely popular in both industry and education, and have significantly influenced how we have come to understand learning. Kontio (2015) concludes that CoPs are relevant to HEIs who are forcing closer connections between formal and workplace learning. She also suggests that this book raises vital questions regarding the nature of institutions such as a need to meet with learners' requirements in their values/practices rather than emphasising the delivery of curriculum.

As discussed above, three prominent models/frameworks have gained considerable recognition in educational literature and amongst HE faculty. Researchers also identify a number of conceptual or practical issues with each of these models despite their educational acclaim. Regardless, these models offer heuristics for ways of thinking, discussing, and reflecting on practice. While a CoP may be more

complicated, complex and sophisticated, arguably it is more convincing regarding the nature of human learning, than either TPACK or a CoI. Even Wenger's critics recognise the contribution to thinking about learning that Wenger has made, and all pay tribute to the tremendous popularity and uptake of his work in the academic and professional communities. In sum, while there are approaches to learning with technology that potentially effect meaningful learning experiences, pedagogy is complex. The most sophisticated of models are not without their issues. This complexity is further compounded when technology becomes part of the learning experience. There is a need for a faculty voice when it comes to learning with technology.

2.6 Research Aim and Research Questions

The literature review presented in this Chapter 2, establishes that the nuances of pedagogy can be overlooked by HEIs/HE leaders, along with digital learning researchers. For instance, many HEIs believe that digital learning is an appropriate response to contemporary learning need and will simultaneously improving efficiencies and learning efficacy. Correspondingly, there is often an undisputed acceptance of digital learning as part of the typology of HEIs and a corresponding neglect of how technologies and pedagogy/education relate to one another. Several leading educational authors' who acknowledging the possibilities of digital learning, problematise HEIs acceptance of digital learning as an inevitable means of supporting teaching and learning. They regard this contemporary HE paradigm as neoliberal and deterministic in nature and argue that it homogenises learning cultures by disregarding learners' identities. There is also a tension between HE leaders and some faculty who

criticise the priorities and approaches taken by HE leaders. Significantly, faculty integration of technology into their teaching and learning practices is to date generally formative rather than transformative. This is noteworthy since nurturing learners' 21st century skillsets is reliant upon effective technology usage for pedagogy. In turn, this threatens learners' professional and personal success, notwithstanding social and economic wellbeing. While there are approaches to learning with technology that potentially effect meaningful learning experiences, pedagogy is complex. The most sophisticated of models are not without their issues. The literature review identifies a need for facult voice when it comes to learning with technology that is overlooked in previous research. It identifies a need for scholarly research that critically appraises digital learning and focuses upon how pedagogy and technology relate to one another. As pointed to by Castañeda and Selwyn (2018, p.3), a disregard of pedagogy that shapes technology usage in research and HE discourse "makes it difficult to robustly question (let alone change) the ways in which the technology is being used to support learning".

The empirical study presented in the following chapters help address these research gaps. The research aims to explore how technology and pedagogy relate to one another from the perspectives, experiences, and understandings of HE digital leaders. Although there is a shortfall in studies that focus upon faculty, arising from the literature review is a lack knowledge and competencies amongst faculty when it comes to technology usage for pedagogy. Given this issue and in view of the complex nature of the connection between pedagogy and technology, the focus of thesis is upon faculty who are experienced in the area of learning and teaching with technology. Furthermore, it is important to note that while leaders who participated in the study are referred to as digital leaders, this is with a caveat that participants are pedagogues

foremost, who are experienced in the area of technology mediated learning. A focus on faculty who are digital leaders will also help reduce a shortfall of studies that explore issues at an institutional level to steer HEIs integrating virtual technologies, along with research involving those leading online learning within HEIS.

The research questions guiding the study are as follows:

1. What are participants' perceptions and understandings of meaningful learning with technology?
2. What are the practices and experiences of learning with technology?
3. What are the key enablers and inhibitors of innovation in digital learning across HEIs?
4. How do the priorities and approaches of HE policymakers regarding digital learning integration compare with those of faculty?

Chapter 3 Methodological Orientation, Research Design and Methods

This chapter is divided into six sections. The areas discussed include the shifting trajectory of the study, the methodological orientation to the study, research methods, collection of data, data analysis, quality assurance and ethical considerations. These sections often overlap owing to the qualitative paradigmatic lens steering the study (Weiss, 1995).

3.1 Methodological Orientation

The research methodology that guided the study was an interpretive qualitative approach. Several rationales steered a qualitative interpretivist methodological orientation. The overarching rationale for selecting this methodology was its compatibility with the aim of the research, and the research questions, all of which were meaning orientated. A qualitative approach would help interpret the meanings of digital leaders' unique perspectives, understandings and experiences of learning with technology. A further rationale was a need for qualitative (holistic) digital learning studies that are currently lacking prior studies (Arnold & Sangrà, 2018). A shortfall in qualitative studies is identified by Smith and Hill (2018) following their meta-analysis of 97 blended learning articles between period of 2012 and 2017. If the field of BL is to progress, Smith and Hill (2018, pp. 392-393) conclude that research in the field must be broadened "through more qualitative, holistic and longitudinal research into the beliefs, attitudes and motivations of those engaged in blended learning and a recognition of the role that staff play in the adoption of blended learning". There was also the issue of a dearth in qualitative research that remained true to the notion of

multiple ontologies. A review by Luo (2011, p. 12) of qualitative educational studies concerning technology/ICT reports that while many qualitative studies use "narrative data", their collection and analysis is often "based on the realist assumption that true knowledge exists and can be measured by learners' performance". Lastly, it was envisaged that the nature of the research outcomes might inspire more researchers and policymakers to consider qualitative approaches. Quantitative approaches tend to dominate digital(blended)learning research (Smith & Hill, 2018). Policymakers allocate resources to quantitative research due to its measurable nature (Bridges, 1997). Assumptions and practices could be shifted if the study successfully captured what Mertens (2005, p. xvii) refers to as the "messiness" that exists in research when studying people. This is a messiness that Mertens (2005) believes quantitative research cannot understand.

The interpretivist paradigm emerged due to a dissatisfaction with the positivist paradigm. Positivists contend that a premise gives rise to generalisable conclusions through deductive reasoning (Cohen, Manion, & Morrison, 2011). Individuals are viewed as separate from their social environment (Murphy & Ivinson, 2003). Interpretivist theorists reject this nomothetic approach (Mack, 2010). The basic tenet of interpretivism is that realities are socially formed (Merriam & Tisdell, 2015)). Interpretivist researchers' are concerned with meanings (Given, 2008). Discussing the nature of qualitative research Denzin and Lincoln (2005, p. 3) contend that "qualitative researchers study things in their natural settings, attempting to make sense of or interpreting phenomena in terms of the meanings people bring to them". Coming to know involves a process of reasoning that is inductive, and revolves around identifying patterns across social realities (Cohen et al., 2011; Mack, 2010). These patterns help shape a narrative around individuals nuanced ontologies.

The study took a broad brush approach to interpretism. It shared some of the characteristics of constructivist-interpretivism such as a belief in multiple subjective realities and a recognition of the core role of the researcher in helping to create understandings with research participants (Denzin & Lincoln, 2005; Mertens, 2005). The study was also influenced by phenomenology. However, it was not possible to conduct a phenomenological study. This approach would have limited the research focus to investigating participants' lived experiences of digital learning. Nonetheless, Hans Georg Gadamer's notion of philosophical (hermeneutic) phenomenology shaped some of the research procedures as discussed in sub-section 3.4.3 (Gadamer & Linge, 1977). It was felt that Gadamer's standpoint held similarities with Wenger's notion of meaning making that may be suited to HE learning needs. To Gadamer, the social interpretation of the meanings of language are historically and culturally located. Understanding in research is "an event of transmission in which past and present are constantly mediated" (Gadamer, 2013, p. 302).

3.2 Shifting Trajectory of the Study

The initial focus of the empirical study was to identify the barriers hindering BL and affordances promoting digital learning integration at an institutional level, and in a pedagogically meaningful way. The intention was to link these findings with different stages of BL integration within participating HEIs. This would offer insight to HEIs striving to make BL widespread. This research focus was partially steered by an influential study conducted by Graham, Woodfield, and Harrison (2013). In their study, Graham et al. (2013) develop a framework to guide HEIs who desire to progress BL. In outline, institutional level markers are identified by case study HEIs that relate

to structures, supports, and strategies. These markers are linked to HEIs stages of BL integration and illustrated within Graham et al. (2013) framework. However, as with the dynamic nature of qualitative research, research questions are as noted by Mertens (2005), subject to change as findings emerge. Corresponding with this, the research aim, and the nature of research questions, evolved in response to a combination of initial findings in the empirical study and a further review of literature, as discussed below. Nonetheless, the research design is in part steered by Graham et al. (2013) study as discussed in sub-section 3.4.2 of this chapter.

Having spent a considerable amount a time reviewing literature concerning educational philosophies guiding research in education, along with learning theory, I was particularly captivated by the work of social learning theorist Etienne Wenger (1998) and Robin Usher (1996). Firstly, Usher (1996) positions research in social processes/contexts and rejects the linear set procedures within research paradigms which he believes reduces research to technology (p.25). Usher (1996) takes aim at the ontology and epistemology that underscores research paradigms/approaches that result in different claims over reality and knowledge, hence objectifying knowledge. Assuming a postmodern lens on research, Usher (1996), argues that knowledge of social phenomenon, events and processes cannot be determined. Knowledge is infused within distinct cultures and research processes and are laden with values. Epistemology comes before ontology and knowing is the bidirectional relationship between the subjective and the objective. This relationship between the objective and subjective, closely aligns with Wenger's (1998) view on learning as a process of meaning making/identity development. Like Usher (1996), to Wenger (1998) knowledge is fluid as it shaped by unique individuals' lived experiences. New knowledge continuously emerges through what Wenger (1998, p. 62) identifies as a

"duality of participation and reification", that is both collective and individual. A focus upon learning, concerning identity, "serves as a pivot between the social and the individual" thereby avoiding "a simplistic individual-social dichotomy" (Wenger, 1998, p. 145). It was Wenger's (1998) lens on learning that ultimately shifted my personal learning lens away from a social constructivist perspective, towards a social understanding of learning. Through this lens the notion of a blended or digital learning adoption seemed inappropriate since virtual environments or what Wenger terms as "digital habitats", are spaces that merely enable learning in communities (Wenger et. al., 2009, p. 3). Furthermore, participants' initial responses which identify digital learning as just learning, reinforced this notion. Hence the initial research focus upon blended learning adoption, and linking facilitators and constraints to the adoption of blended learning that separated out digital learning from learning was revised. Prompted by a need for faculty voice concerning pedagogy in the area of digital learning, coupled with a lack of research that considers pedagogy underscoring technology use as detailed in section 2.6 of the thesis, the aim of the study and research questions changed. The focus moved to solely interpreting the perspectives, experiences, and understandings of HE digital leaders in the area of digital learning.

3.3 Research Methods

This section commences with an overview of the research sample. Following this, the decisions and the sampling strategies that were involved in the selection of participants are outlined and discussed, followed by a brief overview of the institutional demographics.

3.3.1 Nature of the Sample

In total there were twenty-one participants involved in the study. This was a purposive sample. As per the inclusion criteria all participants were digital leaders. Furthermore, twenty were working within a HEI. The nature of participants' roles varied. There were two participants who identified as either a pro-vice chancellor or vice-president of learning and teaching or research/scholarship into T&L. One participant described himself as a head of teaching and learning. A further three participants identified themselves as either a director, co-director or a head of a digital/online learning centre/institution/unit. Similarly, four participants described themselves as a director or head of eLearning/digital learning/learning technology and innovation. A further two participants were directors of teaching and learning centres/institutes. Another two participants were professors in education that were previously tenured as heads of teaching and learning. A total of four participants were in charge of digital/online/e-Learning development/support/units. One participant was a professor who taught within the field of education and technology. During his career he also developed a research centre into learning / technology. Another participant was a professor of distance education and development, and international teacher education. Lastly, the one participant not working within a HEI was an author in the area field of learning and digital learning. Of the twenty-one participants, seven were internationally renowned authors in the area of digital learning. Participants HEIs were geographically dispersed across Europe (fourteen), Australia/Asia (three), and USA/Canada (four).

3.3.2 Selection Decisions and Sampling Strategies

It was important to consider a sampling strategy as this can be overlooked within educational research. Guetterman (2015) identifies a neglect of sampling procedures following a review of 51 of the most cited qualitative studies in education and health. However, it was difficult to identify a suitable sampling strategy as there is a limited focus upon qualitative sampling methods within research methods literature (Moss, 2005). It was also necessary to explore whether or not a sampling strategy was necessary. Gentles, Charles, Ploeg, and McKibbon (2015) highlight that there are authors such as Van Manen (2014) who believe that sampling methods serve to generalise phenomena.

Despite a limited focus on qualitative sampling, several research methods authors concede that sampling methods are an important component within qualitative studies. For example, Mason (2017) contends that sampling is necessary as the nature of qualitative data is complex. She also considers sampling to be important as it is not possible for researchers to investigate entire populations. Hence, while concerns regarding generalisation in qualitative sampling were warranted, it was felt that this issue could be overcome. Mason (2017, p. 71) highlights that a representative sample has both theoretical and empirical commitments. When both are considered a sample amounts to "anything and everything in a wider population" (p.71). Mason (2017) also argues that qualitative researchers often relate their sampling criteria to the demographic characteristics of individuals. This practice leads to generalised research outcomes. Instead, Mason proposes that qualitative researchers focus upon meaning and base their sampling upon individuals' experiences.

Due to a lack of consistency and clarity regarding the nature of purposeful sampling, it was necessary to identify a suitable interpretation at the outset as proposed by Gentles et al. (2015). Patton's (2002) understanding of purposeful sampling guided this study. To Patton (2002, p. 230), sampling that is purposeful entails identifying "information rich cases" that will offer deep insights into what is of "central importance to the purpose of the inquiry", which in this study revolved around the nexus between pedagogy and technology in HE. It was also felt that purposeful sampling would positively impact upon the external validity of the study. Qualitative external validity is achieved when sampling strategies identify participants' meanings as unique and discerns the reader as the interpreter of degrees of commonalities that potentially exist (Mertens, 2005).

At the planning stages it was important to consider the sample size. Determining a sample size was problematic even though it is suggested that smaller samples are appropriate in qualitative sampling (Mason, 2017). The literature that addresses qualitative sample sizes is both inconsistent and scarce, as highlighted by Guetterman (2015). Discussing qualitative sampling methods, Mertens (2005) explains that some researchers assign specific samples sizes to distinct research methods and methodologies. In contrast, there are authors who view sample sizes as dynamic as and they interconnect sampling with the research questions. On further review of literature, it emerged that numbers are less important in purposeful sampling as highlighted by Mason (2017). Guetterman (2015) argues that what matters most in educational/social research is that qualitative researchers focus on why and how they sample. In view of this, an approximate number of participants were identified that was subject to amendment, as proposed by researchers (Merriam & Tisdell, 2015).

This was based upon researching "a point of saturation or redundancy" (Merriam & Tisdell, 2015, p. 80)

Intensity sampling was employed to formulate a sample frame. It entailed identifying individuals who were rich in their experience of digital learning, which was the phenomena being explored (Mertens, 2005). The initial inclusion criteria included participants as digital leaders and working within higher education institutions. Corresponding with this, several digital leaders at a local national level within Irish HEIs were targeted. However, these criteria proved to be overly broad. The experimentally accessible population fitting these criteria was extremely large despite digital learning being a relatively young field. Hence, additional criterion was introduced. Several internationally renowned authors in the area of digital learning were targeted considering their high level of experience with and knowledge of digital learning. An online search helped to establish which HEIs these authors were affiliated with. A selection of digital leaders from HEIs positioned within the top 100 and top 50 universities in the world were also identified and targeted. Several of these ranked highly in the subject area of 'education and training' in the QS ranking of universities (QS). Some of these HEIs were selected via a literature review of newspaper articles, journal articles, and/or books. It was felt that these individuals would provide rich data owing to their experience and knowledge as digital leaders within reputed HEIs. These HEIs were identified via QS world ranking site, and individuals were identified via institutional websites/Google search engine. Lastly, a further criterion was that digital leaders were targeted from within geographically dispersed HEIs.

The initial sampling frame comprised of twenty-eight digital leaders. Most individuals were contacted via email, and one individual was approached at an educational conference. A total of eleven individuals from the initial sampling frame

consented to participate. Following this, a further two globally renowned authors were contacted, and both agreed to be involved in the study. Cognisant of a shortfall in HEIs located in Australia/Asia, a further two individuals working within a high ranking HEIs within these regions were approached. Both were willing to engage. Furthermore, a digital leader working within a European HEI pioneering digital learning at a national level, was contacted and agreed to partake in the study. Likewise, a leader working within a high-ranking European university was contacted and consented to participate. An interview with one participant resulted in a snowball effect, that led to identification of two additional participants. During this interview, the digital leader provided me with the contact details of a virtual community for digital within HEIs. The organiser of the group subsequently put me in touch with these digital leaders. Lastly, a further two digital leaders working within Irish HEIs were contacted and consented to partake in the study. In sum, twenty-one individuals participated in the study.

3.3.3 Demographics of HEIs

As mentioned in section 3.2 of this chapter, the initial aim of the study was to identify stages of digital learning integration within HEIs, guided by a study by Graham et al. (2013). Whilst the focus of this study shifted, the methods used in the study were influenced in part by Graham et al. (2013) study. In their case study research involving six HEIs, Graham et al. (2013, p. 6) case study demographics are adapted from "The Carnegie Classification of Institutions of Higher Education" framework' to illustrate the background information relating to institutions partaking in their study (The Carnegie classification of institutions of higher learning, 2010).

Similar to this, a table was developed to guide this research. This table is not included in the Appendices as it could potentially compromise participants anonymity. This table provided me with a broad overview of the institutional backgrounds of participants. In the table, participants were each assigned a unique identifier code ranging from A1 to A20.

From the table used by Graham et al. (2013) headings used in the table included 'Control' (Public/Private), 'Enrolment Profile', 'Setting', and 'Years Blending Learning'. It was initially intended to obtain the latter information from the interviewees themselves as the original aim of the research revolved around BL adoption. Regardless, several headings and categories were also taken from the 'QS World Rankings classification of higher education institutions framework'(QS Quacquarelli Symonds Limited, 2017). These included 'Age of Institution' (New <10, Young 10-25, Established 25-50, Mature 50-100, Historic >100). The QS heading 'Institution Size' was also employed. QS categorises institutional sizes as, Small <5000, Medium >=5000, Large > =12000, and Extra-Large >30000 (QS Quacquarelli Symonds Limited, 2017). Furthermore, the QS heading 'Status' (Public/Private) was included. Synonyms of some of the headings in the QS ranking framework are also evident in case study demographics table used by (C R. Graham et al., 2013, p. 6).

Following the development of a table outline, information pertaining to interviewees' HEIs was obtained via a combination of accessing the 'QS Quacquarelli Symonds Limited' website, HEIs websites, and through online search engines. As mentioned in sub-section 3.1.1, twenty of twenty-one interviewees were working in HEIs. With regards the 'Status' of HEIs, all were public HEIs. The range of institution sizes were, Small <5000 (one), Medium >=5000 (four), Large > =12000 (ten), Extra-Large >30000 (five). The 'Age of Institution' included, Established 25-50 (four),

Mature 50-100 (four), historic >100 (twelve). Just one university was a distance educational institution. The student populace of over half of HEIs was primarily undergraduates, whilst the remainder HEIs had a higher mix of postgraduates and undergradates. These varied from approximately one quarter postgrad right up to a fifty percent postgrad/undergrad. Lastly, as mentioned in sub section 3.3.1, participants HEIs were geographically dispersed across Europe (fourteen), Australia/Asia (three) and USA/Canada (four). Seven participants were internationally renowned authors in the area of digital learning.

3.4 Collection of Data

This section addresses the "Operationalizing Concepts" involved in the identification of strategies that will help address the research questions (Mertens, 2005, p. 344). Operationalising concepts are the processes involved in determining the nature of data to be collected and in selecting the data collection methods (Mertens, 2005). Following this, the process of data collection is outlined. This section focuses upon interviews which were the primary method of data collection, coupled with email correspondence.

3.4.1 Qualitative Semi-Structured Interviews

In qualitative research three methods of data collection dominate. These include interview/focus groups, document analysis, and observations (Mertens, 2005). Of this triad, interviews were selected as the primary mode of data collection. The rationale for this choice was their suitability to collecting the complex data required to respond to the research questions. The purpose of interviews Patton (1990, p. 196)

explains, is to "enter into the other person's perspectives". Depending on the interview approach, research methods authors agree that interviews can be suited to interpreting individuals' subjective lived experiences of the world (Kvale, 2008; Marshall & Rossman, 2006). Weiss (1995) explains that interviews help researchers to describe phenomena and processes, deal with and interpret multiple viewpoints concerning a phenomenon, and create holistic descriptions. This aligns with the aim of the study.

One of three important classifications that Lincoln and Guba (1985, p. 268) link to interviews are "*degree* of structure". Structures are commonly illustrated using a continuum. They can vary from unstructured, to semi-structured, to formal (Edwards & Holland, 2013). Qualitative research interviews are generally unstructured or semi-structured, while formal structures are considered quantitative (Mason, 2017). The interviews conducted were semi-structured rather than unstructured as some authors problematise unstructured interviews. For example, Merriam (1998) claim that it can be difficult to analyse the vast array of complex data collected from unstructured dialogic exchanges. Some authors are critical of the theoretical underpinnings of the unstructured interview. They believe that research is never completely emergent. Pre-conceived notions are inevitable regarding the research design and processes (Given, 2008). The semi-structured nature of the interviews also facilitated the inclusion of questions that covered themes of interest that emerged in the literature review, and provided flexibility through the emergence of open-ended questions (Bernard, 2000). This made data analysis less complicated.

3.4.2 Interview Schedule Design

The final interview schedule was comprised of 34 questions (See Appendix A). This was a shortened version of an initial draft schedule. Amendments to the draft

schedule included the omission of the opening questions regarding participants institutional demographics. Instead, this information was retrieved from an amalgam of institutional websites, 'QS World Rankings classification of higher education institutions framework' (Limited, 2017) and online search engines. This reduced the interview timeline. It also helped create symmetry with the interviewees that can be imbalanced when interviewing leaders/elites (Kvale, 2008, p. 70). Moreover, the initial interview schedule was lengthy and had some repetition. Hence questions were omitted to remedy this.

The opening question asked participants to describe the nature of their role at their HEI. It was important to commence the interviews with a general question to build a rapport with interviewees as suggested by Mertens (2005). The concluding question invited participants to add comments that they felt would be beneficial to the research. They ensured that participants had covered all areas that they deem relevant, which Mertens (2005, p.373) also identifies as important and which she terms "turning over control". The remainder of the interview schedule was steered by key findings/issues identified from a review of literature. Furthermore, some questions were loosely guided by an interview protocol, and a checklist developed for institutions' self-evaluation, developed in a study by Graham et al. (2013, pp. 11,12). Graham et al. (2013) investigate the issues experienced by six HEIs at different stages of institutional adoption of blended learning. Their focus is in response to a scarcity in research exploring institutional adoption/policy of blended learning/and the transition between different levels/stages of BL integration. Following a comprehensive literature review, Graham et al. (2013) identify policies that relate to Bl at an institutional level that concern implementation and adoption. These are placed within the categories, support, structure, and strategy. Their study establishes markers

that relate to each of these categories that are identified by six HEIs at diverse stages of BL. These were identified through interviews and document reviews. Graham et al. (2013, p.7) create a matrix that represents "the categories and stages in the BL adoption framework used to organize the findings" that acts as a guide for senior admin who desire to progress BL.

As explained in section 3.2, the initial research focus and approaches taken were similar to Graham et al. (2013). It was initially hoped that HEIs stages of blended/digital learning could be identified using percentages that Rogers (2003, p. 281) associates with "Adopter Categories" (See Appendix A (Q3)). This approach was far more prescriptive than that taken by Graham et al. (2013). They base HEIs stages of implementation on their years blended learning or being well known for BL courses, and use Rogers (2003) 'diffusion of innovation' stages to draw comparison with the stages and categories of BL implementation in their study. As findings emerged during the interviews' and on further review of the literature, my presuppositions as a researcher shifted as explained in section 3.2. Cassell and Symon (2004) consider this shift important when conducting qualitative interviews. The earlier notion that digital learning should be integrated by HEIs was also revised. Fundamentally, through a social learning lens, it was felt that a focus upon 'blended' learning and the adoption of 'blended' learning separated it out from learning, and privileged technology over learning – even when the focus was on pedagogy.

In the end, the sole focus of the study was participants' understanding, experiences, and perspectives of learning with technology/digital learning. This was similar to Graham et al., (2013, p.6) who explore the "perceptions, feelings, and attitudes", of their participants. However, this study differed in that findings would not be linked to stages of digital learning integration. Furthermore, some of the inclusion

criteria regarding participants were dissimilar. In this study it was not necessary for participants to be extremely experienced and knowledgeable regarding their HEIs "stance on and relative implementation of BL policies" which was this case in Graham et al. (2013, p.7) study. Nonetheless, a number of key areas addressed by Graham et al. (2013, pp. 11,12) in the interview protocol they employ, along with a checklist for HE admin who wish to evaluate themselves their particular stage of progression in blended learning implementation, loosely guided some questions within the interview schedule design.

As mentioned in sub-section 3.3.1, one interviewee was not working within HEI. A short questionnaire was developed specifically for this leader. This schedule could not be included in the appendices as the nature of the questions that relate to the interviewees' work would potentially threaten their anonymity. As there was one interviewee working within a traditionally distance (blended) university, questions in the interview schedule were tailored to reflect this. For instance, questions regarding stage of BL integration were omitted. Lastly, the original draft of the interview schedule was used for this interview and represented a pilot for the study.

3.4.3 The Interview Process

Following ethical approval (See Appendix B), a series of twenty-one semi-structured interviews were conducted with digital leaders. Interviews were conducted from summer 2014 to early spring 2015. Participants were invited to participate via email. An invitation was sent to the study population of thirty-eight individuals. This email provided background information on the researcher, outlined the research aim, and briefly indicated the criteria for selecting unique participants (See Appendix C). A point of note is there were slight variances in some emails as they were tailored to

the digital leaders being contacted. Regardless, each of the 21 leaders who consented to partake, were emailed a consent form to complete (See Appendix D) and an information sheet (See Appendix E). The information sheet outlined the purpose of and motivation for the study, the interview timeline of 30-45 minutes, and key themes with examples of questions arising from literature review/protocol by Graham et al. (2013). Participants were made aware that the items in the schedule overview would not be rigidly adhered to. The direction of interviews would also be guided by the emergence of issues from participants perspectives. Scheduling interviews was a timely process. Gaining access to elite/leaders proved problematic. This is a potential issue identified by Kvale (2008). Participants were invariably time constrained. Several interviews were rescheduled due to the emergence of unforeseeable engagements amongst digital leaders. Some interviews were scheduled weeks/months in advance. In a small number of cases, interviews were arranged via an intermediary such as a personal assistant. This process also proved time consuming.

A total of 20 interviews were conducted online via Skype, and one interview in person. Many of the interviews went beyond the suggested timeline and were closer to one hour. Conducting the interviews online provided the temporal and spatial flexibility that was vital to the success of the study. These are seen as key affordances of online interviewing (Mason, 2017). Participants were geographically dispersed, and therefore face-to-face interviewing would have been too costly. Some interviews were conducted late into the evening or early morning to accommodate interviewees different time-zones.

It was important to be cognisant of issues associated with online interviewing. Distractions and confidentiality issues have been linked to online interviewing (King & Horrocks, 2010). To reduce the potential for disruptions, the online interviews were

conducted in a private workplace office. The possibility of eavesdropping was minimised by using the telecommunications application Skype that encrypts voice calls (Skype, 2019). Skype interviews were recorded using Audacity, which is a "Free, open source, cross-platform audio software" (Audacity, 2019). Mason (2017) suggests that certain capabilities and skillsets are necessary to interact online and to navigate technology. These did not warrant consideration as both researcher and those being interviewed held a high level of knowledge and expertise in the field of digital learning. Nonetheless, a technical issue emerged. This is a further challenge that Mason (2017) stresses researchers must be also prepared for. A recording error occurred with the first interview. Nonetheless, the interview was beneficial in understanding the fluidity of qualitative interviews and for reflecting upon the nature of emergent questions.

Qualitative researchers are regarded as instruments during the process of data collection (Mertens, 2005; Sensing, 2011). Influenced by Gadamer, it was felt that biases as a researcher were fundamental to the genuine interpretation of the data (Gadamer & Linge, 1977). Gadamer claims that they facilitate new meanings by ensuring that "what we encounter says something to us" (Gadamer & Linge, 1977, p. 9; Moss, 2005). However, it was important to reflect upon potential biases throughout the interviewing process. This is suggested by Mertens (2005) to ensure authentic rich data is generated. Although in reference to texts, (Moss, 2005) warns that researchers presuppositions can be challenged and clarified by texts.

The relationship with the interviewee was also considered when generating new questions. This relationship is a second important classification that Lincoln and Guba (1985) associate with interviews. Although this study was not intrinsically phenomenological, the interview approach was influenced by Gadamer's hermeneutic

tradition. Understandings were mediated linguistically between the researcher leading in some interviews, to a fusion of horizons and the emergence of authentic meanings (Moss, 2005; Wilcke, 2002). This approach is comprehensively addressed by Usher (1996) who explain that the fusion of horizons occurs within a hermeneutic circle. Interpretation is circular in that an action demands that parts are understood in terms of the whole while the whole requires comprehension of the parts meaning and actions are culturally and historically bound. They are submerged in what Gadamer terms as 'traditions'. Usher (1996, p. 19) explains that 'tradition' refers to the beliefs, practices, presumptions and assumptions, which "subjects and objects of research" are not always cognisant of, and that cannot be completely specified. The approach taken concerning the generating of new (emergent) questions in the study, was guided by Gadamer's recommendation that researchers demonstrate an openness to the research topic during dialogic action to fuse horizons with each participant (Wilcke, 2002). I strived to go "beyond what is said" in my "answer to a question" as proposed by Gadamer (Gadamer, 2004, p. 363). This practice also helped interviewees make connections between actions and the traditions in which they occur, as they are not always aware of this relationship (Usher, 1996).

On a final note, uneven symmetry that can occur when interviewing leaders was not experienced (Kvale, 2008). The researcher/interviewee relationship was arguably phenomenological in nature. Interviewees provided valuable knowledge and information, were open to being re-contacted, and requested that I stay in touch.

3.4.4 Follow-up Question

As a considerable period of time had lapsed since the completion of the interviews, a follow-on question was also sent to participants via email. It would have been preferable to conduct interviews, however scheduling, conducting and analysing data would have been time consuming. It was felt that email correspondence was appropriate as it provided digital leaders', many of whom were time constrained, with flexibility, hence the potential for richer data. This is an affordance identified by Given (2008) when discussing email interviews. Following ethical approval for an amendment to the original research (See Appendix F), participants were re-contacted almost three years after the initial interview took place. Participants were contacted via email and invited to answer one further question in order to complete the empirical study (See Appendix G). In total nineteen participants working within HEIs were contacted. Of these, thirteen individuals responded to this question. The nature of the question that participants were asked, was inspired by response made by participant A5. During our interview he proposed that the following question be put to leaders.

> It would be interesting for you as you're going through your study to examine what have been the game changing factors at an institutional leadership level that have created the breakthrough at the institution…… I always wonder what is the one thing that an institution did that enabled innovation in online and blended learning to happen. Was it an incentive, was it tenure and promotion, was it money, was it the support system – what was the one thing that allowed it to happen…? If you get that information, I would love to hear back from you. (A5)

Steered by the suggestion of digital leader A5, the following question was composed.

> Could you specify one thing your institution has done that has enabled innovation in online and blended learning? Or perhaps you can suggest something that has created a breakthrough at your own institution?

3.5 Data Analysis

This section addresses the principles and processes involved in the data analysis. The opening section introduces the data analysis strategy steering the interpretation of the data and outlines the selection criteria for this method. Following this, the processes involved in the analysis of data are described and discussed.

3.5.1 Principles of Data Analysis

Hennink, Hutter, and Bailey (2010, p. 205) stress that researchers must identify and follow data analysis procedures for the effective preparation, analysis, and interpretation of data. As this study was interpretative in nature, the data analysis strategy needed to be flexible. This is necessary Mertens (2005) stresses, as the processes involved in analysing qualitative research are recursive. Generally, qualitative data goes through several iterations of interpretations owing to its complex nature (Cassell & Symon, 2004; Green, Camilli, & Elmore, 2006). Reflexivity between the different phases of data analysis allows for understandings of data to be reached (Braun & Clarke, 2006).

The data analysis strategy considered to be compatible with this study was Braun and Clarke's (2006) thematic analysis. Braun and Clarke (2006) introduce their conception of this strategy in a seminal article that explores the theory, application, and evaluation of different understandings of thematic analysis. Although Braun and Clarke (2019) have since redefined this strategy as reflexive thematic analysis, their original understanding guided the study. In line with other research methods authors such as Mertens (2005), Braun and Clarke (2006) claim that thematic analysis must retain flexibility in how it is applied. However, they also argue that researchers must

explain the nature and potential application of their data analysis strategy, so that researchers have a clearer picture of how they approach data analysis.

Braun and Clarke (2006) conception of thematic analysis was developed in response to the limitations of thematic analysis strategies committed to specific theoretical approaches. They establish that theoretically committed thematic analysis strategies centre solely upon identifying patterns/themes across data sets. This restricted focus fails to consider data within individual data items. To overcome this, Braun and Clarke (2006) propose that thematic analysis be understood as a stand-alone method. This would facilitate flexible data analysis processes. Along with allowing researchers to consider unique data items when desired, they argue that their method is compatible with several theoretical vantage points. Furthermore, thematic analysis is concerned with identifying "patterns of meaning" that develop into abstract themes (p.86) as opposed to generalisable findings. This aligned with the research focus. Thematic analysis is described by Braun and Clarke (2006, p.87) as a six-phase process which they illustrate on a table. This is reconstructed in table 3.1. These six phases guided the process of the data analysis.

Table 3.1 Phases of Thematic Analysis (Reproduced) (Braun & Clarke, 2006, p.87).

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

On a final note, several tentative decisions were made prior to commencing analysis. These decisions are discussed by Braun and Clarke (2006). Major themes would be based upon emergent patterns regarding meaning across the set of data or several data items. The overarching aim was to uncover insights that related to the research questions, without letting the research questions steer what data was coded. Lower volumes of data that raised significant points would also be considered when identifying themes. In qualitative research Braun and Clarke (2006, p. 82) stress that a theme's "keyness" does not require quantification. Minor themes that emerged could also potentially be combined to form a theme. If strong patterns emerged unrelated to the research questions, the research questions would need to be revisited and potentially reconsidered. Such is the evolutionary nature of qualitative research as foregrounded by (Mertens, 2006). Themes would be induced from the data and identified at a semantic level. These choices were based upon a desire to retain participants subjective responses.

3.5.2 The Process of Data Analysis

The interview recordings were transcribed into a specially created Microsoft Word template. Detailed at the top of each file was the unique identifier code for the interviewee, the interview date, and the start and completion times. Beneath this information, a larger column housed the interview data, and to the right of this a narrower column was created for data codes. Verbal, and some non-verbal cues such as laughter, were noted. Furthermore, careful attention was given to punctuation. It was important that the transcripts accurately reflected the intended meanings of the interviewees (Braun & Clarke, 2006). Instances of inaudibility and their time of

occurrence where also noted. At a later stage, recordings were replayed at these points and most of the inaudible words were deciphered. Transcriptions were saved individually using the interviewees assigned ID onto a PC desktop folder. Each of the interview transcripts were initially read at least once. Data immersion facilitated the development of initial thoughts and ideas concerning the data. The email correspondence (follow-up question) from thirteen participants was also reviewed. This data was retrieved at a later stage due to the significant time lapse between this phase of data collection and the interviews. It was a straightforward process as it related to a single question.

Having become somewhat familiar with the data, initial codes were generated. The original intent was to use the software NVivo to store and manage data, as it is a widely used and reputed program amongst qualitative researchers (Mertens, 2005). A two-day NVivo course run by University College Cork was attended which helped develop the necessary skillsets to manage the software. However, as pointed to by Hennink et al. (2010) the researcher is the interpreter of data and therefore understanding the principles and processes of data analysis is what matters most. Considering this, Microsoft word was used to store and manage information during the process of data analysis as it was favoured over NVivo.

Taking an interpretive approach, codes were induced from the data. Even though codes were data driven, their relationship to the four research questions was reflected upon during the coding process. At a later stage it would be necessary to attempt to map finalised themes to the research questions. Following Braun and Clarke (2006) suggestion, the coding process was systemic. Starting with the first interview, all interviews were sequentially worked through. Important and interesting data extracts within data items that could potentially lead to patterns were coded. Codes

were entered manually into the right-hand column in the word documents. The data extracts were linked to codes within the left-hand column were highlighted in yellow. There were also data extracts coded more than once. The coding convention that aligned with Braun and Clarke (2006), ensured that codes and data extract were not separated. For instance, table 3.2 below presents and an example of initial coding relating to the transcript of digital leader A1.

Table 3.2 Example of Initial Coding

Data Extract Yellow	**Code**
what seems to hinder at least from where I come at this is, first of all knowledge – knowledge of what's possible and what's available, so those two strands. So if we look at each discipline there's a whole bunch of apps, there's a whole bunch of supports, that people may not be aware of, and b) then … the second part is the confidence and competence to do it. (A1)	Faculty lack pedagogical knowledge/confidence re BL.

When the coding process was complete, all codes and their accompanying data extracts were retrieved from each data item and collated within a new word document entitled 'Initial Codes'. The data surrounding data extracts was sometimes included to prevent loss of context.

At a later stage, participants' written responses to the question sent via email were also coded against the themes that emerged from the interview data. The transcripts of interviewees who participated in this second phase of the research were reviewed, and relevant codes and data extracts were retrieved and collated with email data.

Codes and data extracts were analysed to identify how different codes might be grouped together to form a tentative theme. Tables were created for each

perspective theme to aid this process. Each table included the theme name coupled with a list of codes beneath. The following table 3.3 is an example of one tentative theme table that related to Faculty Development.

Table 3.3 Example of a Theme Table with Codes

Theme 1 Faculty Development Is Critical	
Codes	Faculty lack pedagogical knowledge/confidence re BL.

On further review of the data extracts and codes, a number of codes within themes were made into sub-themes and arranged under sub-headings within that theme table. A total of five candidate themes inclusive of subthemes were created as illustrated in table 3.4 below. The data extracts relating to each code was entered into the theme tables alongside their code. Codes that were unrelated to themes, or of less relevance, were inserted into a temporary folder. These were later used to form a theme entitled 'minor themes'.

Table 3.4 Example of a Candidate Theme with Subtheme, Codes and Data Extracts.

Theme 1 Faculty Development is Critical			
Sub-Theme 1.1 A Need for Faculty Development			
Codes	Faculty lack pedagogical knowledge/confidence re BL.	**Data Extracts**	What seems to hinder ...is first of all knowledge – knowledge of what's possible and what's available[technologies/supports]....the second part is the confidence and competence to do it. (A1) Often, it's just confidence levels. (A3)

The reviewing of themes followed a two-phase process of refinement described by Braun and Clarke (2006). Firstly, all data extracts collated within themes were reviewed to ensure patterns of coherency. The primary issue encountered at this stage was an imbalance in the volume of data across themes. On further analysis, it became clear that one of the five themes could be merged into an existing theme as a sub-theme, leaving four primary themes. On further review of the data transcripts, it was felt that both individual themes and the final thematic map was appropriate. Subsequently, the key messages within themes were identified/finalised and the data associated with each message identified and collated within each theme. Collating data into subthemes helped with delineating each themes story. It was felt that the story emerging from the themes was coherent and an accurate reflection of the data. The names of some themes/subthemes were altered to portray more clearly the nature of theme.

Having finalised interview themes and sub-themes, a narrative analysis detailed the findings that emerged from the data corpus. Clear data extracts were included in this report, to illustrate the key messages discussed. As it was also important to address findings in relation to the research aim, as suggested by Mertens (2005), a matrix was created that linked the key messages within themes, with the four research questions.

3.6 Quality Assurance

Mason (2017, pp. 219-220) suggests that while there "are no self-evidently correct answers to intellectual puzzles" it is important that qualitative researchers "demonstrate to others what led them to suppose that their argument was appropriate

or persuasive". It was necessary to select indicators that would help generate evidence that the information in the study was "trustworthy and believable", as stressed by Mertens (2005, p.379). However, this task proved problematic as consensus has yet to reached regarding the nature of qualitative quality assurance standards (Merriam & Tisdell, 2015). Many researchers believe that traditional research indicators that include validity, reliability, and objectivity, do not accurately reflect the philosophical underpinnings of qualitative research (Merriam & Tisdell, 2015). As an example, reliability is contested for assuming that research instruments are neutral, lack bias, and are open to standardisation (Mason, 2017). It also estimates human actions as static (Chilisa, Preece, & Education, 2005). In the end, Guba and Lincoln (1989) standards of "dependability, credibility, and confirmability" were selected to judge the quality of data (in Mertens, 2005, p.379).

Guba and Lincoln (1989) use dependability in lieu of reliability. Dependability views change as an inevitable and important part of the research process. Mertens, (2005) explains that this contrasts with reliability that refers to stability over a period of time. To demonstrate dependability, changes during the study were tracked (Guba & Lincoln, 1989; Mertens, 2005). This was necessary to ensure that the study could potentially be replicated with similar subjects and contexts, and show similar findings (Erlandson, Harris, Skipper, & Allen, 1993; Guba & Lincoln, 1989). Changes that occurred were noted in the analysis and final report. The most significant documented change was the evolution of the aim and research questions as outlined in section 3.1.

Guba and Lincoln (1989) trade internal validity with credibility. Credibility is being confident that participants' intended meanings were accurately portrayed in the research. Triangulation was selected from a list of potential strategies developed by Guba and Lincoln (1989), to validate and verify the data analysis. This was despite

Guba and Lincoln's criticism of the strategy. They claim that its focus upon identifying consistencies runs counter to the notion of multiple ontologies (Mertens, 2005). However, triangulation was considered to be a suitable strategy as the nature of consistencies being explored were patterns regarding meanings (Braun & Clarke, 2006). Therefore, the co-existence of perspectives and contexts, hence ontologies, were acknowledged. From the various methods of triangulation discussed by Patton (p.1193-cite), triangulation of sources was selected to verify that the interview data was accurately portrayed in the research.

Guba and Lincoln (1989) develop 'confirmability' as an alternative to 'objectivity' as explained by Mertens (2005). Confirmability is satisfaction that the nature of data, the interpretations made, and the findings, link to individuals and their contexts. Confirmability involved providing transparency regarding the processes involved in the interpretation of findings, inclusive of personal biases and prejudices as a researcher. It was felt that the six phase data analysis processes strengthened the confirmability of the study. As previously outlined, it involved coding and recoding, and revisiting data extracts to ensure accuracy both within and across the thematic map. Tables were also developed that linked theme and sub-theme names, with data codes and data extracts (with extra data for context).

3.7 Ethical Considerations

Clegg and Slife (2009, p. 24) argue "every research activity is an exercise in research ethics, every research question is a moral dilemma, and every research decision is an instantiation of values" (as cited in Mertens, 2005 p. 336). Aligning

with this, ethics were considered throughout the research process on two levels. These included institutional ethical procedures and guidelines, and personal judgements.

Guidelines for conducting ethical educational and social research are provided by various organisations such as educational research associations, ethics committees within HEIs, as well as national legislative bodies. As universities are funded and regulated by national agencies they generally follow their recommended guidelines (Willis, 2007). An important first step was gaining ethical approval from my institutions' ethics committee (Cohen et al., 2011; Mertens, 2005). An ethics approval form was submitted to the 'Social Research Ethical Committee' (SREC) within University College Cork. This form detailed the project aim, objectives and methods, and outlined potential ethical issues and how they would be addressed. The ethics committee also received a copy of the information consent form that would be emailed to participants. Following minor amendments, ethical approval was granted (See Appendix B). Ethical approval was also sought at a later stage for a minor change to the research study. The ethics committee approved the inclusion of one further question, and confirmation of this approval was sent via email correspondence (See Appendix F).

The SREC ethical guidelines steered the ethical procedures throughout the study. Each participant was emailed a document that included an informed consent form and an information sheet on the project. These documents helped achieve what is considered in research to be the "ideal degree of overtness" (Miles & Hernandez Jozefowicz-Simbeni, 2010, p. 420). Participants were informed of the study's purpose, why they had been asked to participate, what the interview would involve, and how their data would be used. Participation was voluntary. At the outset, participants were informed that they could withdraw from the process at any stage up until two weeks

following the interview. Participants were also ensured that the utmost confidentiality would apply. Data extracts used in the final analysis were anonymised using a pseudonym. To protect anonymity, HEIs names and other potentially identifying information were omitted. Descriptors for related regions were employed where possible when discussing the geographic location of HEIs. These included Australasia, US/Canada, and Europe. Descriptors for related Information within the final analysis that related to policy documentation was paraphrased. Lastly, participants were informed that their information would be kept for the duration of the study and retained for 6 months thereafter.

A number of qualitative research methods authors contend that the guidelines advanced by institutional ethics committee can be limited. Discussing the situated nature of ethics, Cohen et al. (2011) stress that the rationalist nature of ethical guidelines produced by institutional ethics committees cannot account for all ethical issues. Instead, many are unique to a research study (Cohen et al., 2011). To overcome this potential limitation the moral obligations that relate to ethics were considered. As proposed by Atkins and Wallace (2012), unforeseen ethical issues would be responded to during the study in a situated and reflexive manner. Advice would be sought from my supervisors, and/or research ethics literature would be read to identify suitable ethical responses. No ethical issues were encountered during the study.

Chapter 4: Naturalisation of Learning with Technology

4.1 Introduction

This chapter addresses the theme of the naturalisation of learning with technology into HEIs learning cultures. It is divided into three major sections. The opening section (4.2) explores the impact of the naturalisation of learning with technology upon the nomenclature of blended learning. The theme of naturalisation is developed further in the second section (4.3) of this chapter which concentrates upon the relationship between disciplinary cultures and the manner in which technology is naturalised into HEIs learning cultures. Following the presentation of key evidence, a discussion of the analysis is offered in the third and final major section (4.4) of the chapter.

4.2 Blended Learning is Outdated: "It's Just learning"

4.2.1 All learning involves the use of Technology.

My evidence, presented below, shows that blended learning defined as technology use describes all HE learning experiences. My evidence also leads me to the claim that the naturalisation of learning with technology is responsible for definitional ambiguity.

The term blended learning is now part of HEIs' vernacular internationally. Yet, individuals working within historically campus based HEIs are considerably challenged with interpreting the term. As a result, there is no clear definition of blended learning. Since digital leaders subscribe to the view that all HE learning now involves technology, the nomenclature 'blended learning' is outdated and no longer

useful or relevant as a term. Of the study population, almost all eighteen digital leaders working within campus based HEIs and one participant working within an entirely distance education institution, discuss the widespread use of technologies in traditionally campus-based institutions. A further point made by digital leaders is that technologies are used to support a wide range of learning experiences that vary in duration and nature. This leads me to claim that the naturalisation of learning with technology into respondents HEIs is responsible for exposing the term 'blended learning' to multiple interpretations. The following are typical examples of interviewees' responses to the question 'how do you define blended learning?'. In these data extracts, digital leaders' reason that the blurred lines between face-to-face and virtual environments within the learning cultures of their HEIs challenges defining the term 'blended learning'.

> [Defining blended learning is] beginning to become a grey area, ambiguous, because the more people bring technology into the classroom, the more you can say there is a blend. (A3)
>
> I struggle with it, and I think everybody does, because you know what is it...what isn't it? and how much and how little? (A7)
>
> [In response to level of BL] I laugh because you know 10 years ago, we were talking about it, and just now there's talk… blended learning again is always this brand-new innovation. (A7)
>
> You start peeling it back.… a vast majority of courses today that are even face-to-face courses have online portions of their programme. They may have a syllabus…readings….resources… even have synchronous parts of their programme that are in an online space. So, is that a hybrid? Is that blended? …. I think the definition is all over the place. (A5)

A minority of digital leaders widen the scope of blended learning definitions to entirely remote virtual learning experiences. This surfaces in their responses to question three that concerns their HEIs stage of blended learning integration. They identify a complexity with identifying their HEIs stage of integration, as both campus-

based learning experiences and those wholly online can be interpreted as blended. This furthers the ambiguity encircling the term 'blended learning'. For example, one interviewee A2 explains that mobile learning is a natural part of all campus-based educational experiences whilst entirely remote learning experiences are blended with a variety of learning activities. Therefore, the interviewee feels that all learning experiences can in theory be termed 'blended'.

> It depends on your definition of 'blend'? I mean we have got an entirely digital wing, and we have 10,000 students studying …who don't come to campus at all…. they have got a huge blend of activities in an entirely digital environment..… we've got another 12,000 on campus where we are doing the mobile plus campus-based learning. So, it depends whether you want me to include the entirely digital ones or not. (A2)

Similarly, another interviewee A9 reasons that both online and campus-based learning can be defined as blended within his HEI as faculty are engaging with virtual technologies in support of all their learning and teaching practices.

> [Lifelong learners] some of these are being taught online using collaborate … an online e-learning and virtual classroom..… [at the same time] virtual learning environment would be used extensively by lecturers, both day lecturers and lifelong learning associate lecturers, to kind of support teaching and learning and assessment [hence blended learning is open to different interpretations]. (A9)

My evidence is overwhelming in showing that learning with technology is in no way new to HEIs. All HE learning experiences involve the use of technologies to varying degrees. Interviewees are frustrated with the notion of defining blended learning as it is subject to multiple interpretations. This makes it difficult for HEIs to determine the fundamental characteristics of the term which leads me to the conclusion that perhaps it is now an outdated concept.

4.2.2 All learning is blended learning when the term concerns technology use.

Blended learning is an umbrella term that captures all learning experiences within HEIs when it is interpreted as technology use. Digital leaders strongly emphasise the extensive use of VLEs amongst faculty and learners, which illustrates the permeation of technologies into their learning cultures. Given that digital leaders generally share a view that blended learning defined as simple technology use classifies all learning experiences within their HEIs, the term 'blended learning' is no longer relevant as a term. Most interviewees point out that blended learning is widespread within their HEIs when term 'blended learning' refers to simple VLE use rather than how technology might benefit pedagogy. The following are typical responses made by digital leaders.

> All courses will provide basic information about their course online, there will be a VLE site per course…. It does not mean that the VLE site is actually used for teaching or for learning necessarily. ... theoretically, I mean if that counts it is 100% (blended learning). (A12)
>
> A lecturer who is using Blackboard to post an answer and share notes, maybe put-up grades, possibly do an online quiz…if you include kind of that as a level of blended learning.… we would have widespread use of different technologies. (A9)
>
> If blended learning is indeed the use of learning management systems, then….it would be actually 100% [blended learning within her HEI]. (A7)

Differing from other interviewees, one digital leader addresses VLE-usage more broadly across all traditionally resident-based HEIs. This interviewee's observation is noteworthy as he is a digital leader within a globally renowned distance education institution that has a historic tradition of learning with technology. In the following, he argues that VLEs across campus based HEIs is indicative that learning with technology is now the norm within these institutions.

> Only 5 years ago within the world of distance and e-learning … [within the HEI name] … we used to talk perhaps rather patronisingly about the distance and e-learning sector and the conventional sector, meaning the people who didn't use technology. That is very outdated now – every campus-based experience has a virtual learning environment, people talk to their tutors and their lecturers through email, they send their assignments in online... every graduate is going to have …. some element of his or her experience through online teaching. (A17)

Mobile devices are a different type of technology used by all learners informally in support of their formal HE learning experiences. Therefore, when blended learning is understood to mean technology use all learning can be classified as 'blended learning', which supports an earlier claim that the term 'blended learning' is now outdated. Of the study sample, approximately one third of digital leaders address learners universal use of mobile devices. Learners are independently accessing information via their mobile devices during in-class campus-based learning experiences, as discussed in the following.

> In a sense there is no such thing I suppose anymore as a traditional learning … while the lecturer may not engage with technology, students certainly are…Wikipedia is the first port of call for every bit of research. …you may not … as a lecturer…engage with technology, but the students are…I've seen it myself….as you're talking on something a student is looking it up on their device, on their phone, on their iPad. (A8)

Other digital leaders who are conscious of the high level of mobile learning within their HEIs, note that learners are learning across different contexts via their mobile devices. Not only do learners access their mobile devices during formal face-to-face learning experiences, they are also supporting their formal education beyond bricks and mortar institutions in social contexts. This shows that learning with technology is naturalised into learners learning identities. Take the following data extracts.

> I think all learning is blended… no one ever studies just online or just face to face…it is always a case of degree or difference… there are things which are

> predominantly online and things which are predominantly in the classroom, and there are some which are much more complicated the mix… in a series of lectures, people are probably looking stuff up online….they read Wikipedia pages when they're on the bus on their phone…do stuff at home with podcasts…that sort of saturation of all the teaching and technology is kind of the norm now. (A12)

> Our students are using mobiles you know every minute of the day, they are using them for learning both within this university and outside the university, frankly. They are using them to commune with peers both within [their HEI] and internationally. (A10A)

Several digital leaders who maintain that all learners are using technologies to support their learning, are less specific regarding the nature of technologies. Nonetheless, when blended learning is interpreted as technology use, all learning can be defined as blended learning. Over a third of digital leaders subscribe to a view that technology is naturalised into learners learning identities. For this reason, learners do not view learning with technology as something separate to learning. As an example, one interviewee who discusses learners' assumptions surrounding their formal HE learning experiences contends that the 'blended' of learning is increasingly "invisible" to learners.

> I think that students are seeing e-learning as learning, and that the technologies are more and more becoming invisible, so that they would not necessarily comment as being a technology anymore it is just there for learning, I think. Something like Moodle is being seen as an invisible technology, it's just part and parcel of the course…. the fact that it is not mentioned very much means it is not causing problems. (A10B)

Another interviewee identifies an expectation amongst learners that their use of technology will be supported throughout their formal educational experience.

> Years ago, we used to promote that we had an online platform, but students kind of expect that now. (A9)

One digital leader explicitly states that learning with technology is naturalised into learners' identities, and for this reason he concludes that issues they experience in higher education have less to do with technology.

> I think the kind of culture of being online is becoming so much more normal and natural [to learners whose learning issues are not related to technology] …because so much of social life and Facebook and Twitter happens that way … Skype … you know just as the way that we're talking now … they become naturalised in people (A17)

Also addressing the use of social media amongst learners is interviewee A8. The digital leader explains in the following that learners are supporting one another informally using social media irrespective of the supporting environment involved in formal learning experiences.

> [learners] they're setting up a Facebook group straight away you know for each programme… Even if we don't implement a blended learning strategy, there is something blended happening I think insofar as the students are … working together online, they're sharing notes … they are communicating digitally … you know even if … it's just purely traditional face to face … you will find that there is an online informal perhaps element. (A8)

In summary, my evidence clearly shows that blended learning when defined as technology use describes all learning experiences within HEIs. Digital leaders position VLEs and mobile devices as key technologies that are used to support all learning experiences within their HEIs. Since VLEs are educational technologies that are extensively accessed by all faculty and learners, learning with technology is naturalised into HE learning cultures. At the same time, learners are independently accessing their personal mobile devices, and other forms of technologies, across different formal and social contexts to bolster their campus-based education. This demonstrates that learning with technology is naturalised into learners learning identities. Taken together, my evidence indicates that all learning experiences are

blended learning experiences when the term is understood to mean technology use, and this leads me to the conclusion that blended learning is now an outdated concept.

4.2.3 The Significance of Pedagogy

The findings, outlined below, show there is a need to move away from a simplistic notion of blended learning as technology use and to focus on learning. The evidence also leads me to the claim that there is a complexity of defining and understanding blended learning or learning with technology, as it concerns learning.

Defining the term 'blended learning' as technology use is problematic. Through this lens, technology is responsible for learning and the learning component of pedagogy is overlooked. Whilst digital leaders acknowledge the potentially valuable role that technologies play in supporting learning experiences, what matters most to interviewees is learning. Because digital leaders identify a need to move away from a simplistic notion of blended learning as technology use and focus upon learning, the term 'blended learning' is inappropriate for use within HEIs. A primary source of concern for digital leaders is weak understanding of blended learning as technology use that neglects the efficacy of learning experiences with technology. Implicit within digital leaders' discourse is a need to resolve this issue. Focusing on pedagogy, several interviewees propose that 'blended learning' be (re)conceptualised with learning in mind. The following data extract encapsulates the sentiments of other interviewees. This digital leader explains that at the core of blended learning is pedagogy and technology is an important tool that can help support innovative pedagogies. Understanding blended learning from this vantage point increases the possibility of meaningful learning experiences with technology.

> The term 'blended learning' …. it can actually be seen as relatively comfortable, or overly comfortable, and certainly not necessarily disruptive…. If we're going to use the term 'blended' ...we have to frame it around disruption and recognise the opportunities as I say technology provides for transformative forms of pedagogy rather than really the status quo…. If blended learning was simply bringing new technologies and other methodologies into the mix and deciding on the most appropriate, then I do not really see what's different. (A4)

Other interviewees share a view that the term 'blended learning' must embody a notion of disrupting pedagogy to increase the potential for effective blended learning experiences. They reason that when blended leaning concerns technology use it projects product models of learning and teaching:

> [Blended learning is] highly misunderstood… an the instrument by which you deliver materials that you would previously have given out by paper doesn't necessitate learning.... there is no change in the pedagogy, no change in the way of teaching, no change in the learning that's occurring from that. (A16)

> Some people are worried it is not meaningful [as BL is often associated with technology use]. It is not just about delivery, it is actually about understanding and using the technology to get a deeper understanding. …. In the knowledge…it is only part of the tool to help us to enable learning to happen and not to overstate it. (A1)

Many digital leaders highlight that blended learning is associated quite often by faculty with VLE use. Interviewees are critical of this interpretation as they regard VLEs as educational technologies that supports learning. This is clear in the following data extracts.

> I think there's a sort of blindness, this sort of over-association of blended learning or online learning with the VLE, rather than in the sort of more complex account of the sort of mesh of technologies they're using to support remote study or learning. (A12)

> Learning management systems…. a lot of people do decide that because they have got a component of their course online that therefore it de facto becomes blended learning… in the sense that I understand it, which is where a very important part of the learning transactions. (A7)

My evidence shows that understanding and defining blended learning as technology use overlooks the learning component of pedagogy, hence the efficacy of learning experiences with technology. There is a need to move away from a simplistic understanding of blended learning as technology use and focus on learning. Technology is a learning resource which has the potential to support the development of pedagogic practices that may enrich learning experiences. For this reason, there is a need for HEIs to conceptualise blended learning in a way that prioritises learning over technology, which leads me to the conclusion that the term blended learning is outdated.

4.2.4 Privileging Pedagogy: Assessment, Dialogue, Transaction

There are nuances in the term 'blended learning' as it concerns learning. Digital leaders subscribe to a view that there is no one easy or shared definition of blended learning. This leads me to claim that there is a complexity of understanding and defining blended learning, as it concerns learning. Nearly all digital leaders suggest it is challenging to define blended learning as it is not possible to describe how technology is used as a resource to support learning experiences. There are nuances in a learning process and as a result, there is a need for more holistic understandings and definitions of learning with technology. These digital leaders - at least some of them - are seeking to promote a rich conception of pedagogy that incorporates such issues as dialogue, assessment, curriculum, identity, community and transaction. In sum, it could be argued that these elements align with a relational stance on learning and pedagogy that subscribes to a rich, situated perspective and one that sits well in contemporary understanding of what constitutes learning. It aligns for instance with

the rich theoretical work of authors like (Lave & Wenger, 1991; B. Rogoff, 1990; Etienne Wenger, 1998). Take for example this following data extract. The interviewee explains that blended learning is difficult to define, as the naturalisation of technologies into learning experiences has resulted in new ways of supporting a learning process.

> We are in a different era or a different age, and this new age of learning [is shifting understandings/expectations/experiences of education] ….so blended is actually changing the conversation of what education actually is. So, because it is a huge part in changing what education is, it's hard to define what blended learning is … and all the ways and shapes in which blended plays out in terms of new pedagogies and new forms of assessment. But that being said, it at least provides a discussion platform, a starting point. (A18)

Understandings of blended learning differ as most digital leaders suggest that socio-cultural factors play a key role in shaping learning experiences with technology. For instance, in the following data extracts, blended learning is advanced as a learning 'activity' and learning 'transaction' mediated by those involved in the learning process.

> For me, the definition of blended learning is that a learning activity, an assessment activity, a teaching activity occurs in a space other than the face-to-face space…. Now that once again is about as clear as mud…. how do you define what learning is, how do you define what an assessment activity is, how do you define what a teaching activity is? (A16)

> Pretty vague I am sorry …. a very important part of the learning transactions in whatever kind of activity [that must involve the use of virtual technology]. (A7)

Approximately one third of digital leaders offer a more detailed description of the important role of learning context and identity in shaping meaningful understandings and/or definitions of blended learning. As an example, one digital leader positions learners' identities at the crux of all pedagogic decisions relating to

blended learning. This followed closely by the learning intentions of the course/program of study.

> The fundamental aspects to the decisions we make about blends…first and foremost understand who your learners are…understand what your learning intentions are … I use the word 'intentions' rather than 'learning outcomes' because this is kind of in the development process … lastly ensure that you understand how the use and the adoption of technology meets not only your students' needs but the learning outcomes….at a meta level also the kind of outcomes that you're seeking for the programme of study that the students are pursuing. (A4)

In a similar vein, another digital leader expresses ambivalence regarding the ability of HEIs to define blended learning as he believes that definitions are contextually bound to distinct cultures of practices and the identities of those learning with technology.

> If someone said it's easy to define – they're wrong. If someone says it's hard to define, they're wrong. Cos it's part of both and it's part neither….it really depends on what sector you're in, it depends on your familiarity with the technology, it depends on the support structures at your college or university and what the administrators have provided there, and the recognition systems that are built for use of technology. (A18)

One interviewee broadly notes the role of different institutional cultures in forming understandings of blended learning, and reflecting on this, proposes that institutions mediate their own unique definition of the term to align with their learning cultures.

> I think it is very idiosyncratic to the institution [as how technology supports learning within HEIs varies] …It is probably more important that the institution define the language for their community … I think just to overcome any confusion or what not. (A5)

Differing from other interviewees, one participant A19 discusses what meaningful learning with technology that focuses upon identity means, for teachers,

knowledge, skills and learners. When blended learning or learning with technology concerns identity, learning experiences are dynamic. Identities of those involved in the learning process steer learning experiences and negotiate what constitutes as knowledge. However, knowledge is not only situated within distinct learning experiences, it also connects to the lived learning experiences of those learning with technology. This illustrates the complexity with defining blended learning when learning concerns identity.

> …focus on identity, you know then for teachers means ..., using their own identity…as a pedagogical resource…. it's more like being a guide…if you are a tour guide you use your own experience of the city, what you understand about the city, to take students through an experience that will give them a sense of what Cork is about. That is a kind of metaphor for what I think teachers need to become…. what that means is that knowledge is just not something that you just find in books or in Google, but knowledge also a sense of how you orient yourself with the world…. therefore, knowledge includes identity, but it can include how you exist with respect to your complex landscapes of different practices. (A19)

My evidence shows that definitions and understandings of blended learning are holistic in nature as blended learning is a process. Digital leaders acknowledge the nuances of a learning process, suggesting that blended learning is shaped by unique learning cultures and the identities of those involved in the learning process. In view of these influences, there is no one easy or shared definition of blended learning, which leads me to the conclusion that there is a complexity of understanding and defining blended learning as it concerns learning.

4.2.5 Rethinking the Nomenclature ‘Blended Learning’ as ‘Learning’

My evidence, presented below, shows that terminology for learning with technology is shifting due to the naturalisation of blended with technology into HEIs. My evidence also leads me to claim the nomenclature ‘blended learning’ was perhaps never appropriate for use in the first instance.

A ‘forward looking’ discourse emerges concerning the terms used to describe learning with technology within HEIs. In the opinion of digital leaders, the nomenclature of ‘blended learning’ and ‘eLearning’ concerns just learning. Technology is a learning resource that is now naturalised into learning cultures. Because interviewees share a view that the term blended learning lacks an understanding of the reality of learning within their HEI, the term blended learning is now outdated. Over one third of digital leaders are wary of employing terms such as blended learning or eLearning, as these terms suggest that learning with technology is distinct from learning. This privileges technology over learning, which leads me to claim that term blended has never been appropriate for use within HEIs in the first instance. In their search for more appropriate terminology, several digital leaders propose that the term learning is a more suitable term. It emphasises what matters most: learning. The following are typical responses made by interviewees.

> If someone talks about e-learning or e-teaching, in fact in some ways the E can be dropped and it is just talking about learning, of which the digital strand and pedagogy is just one approach to it. (A1)
>
> The key word is not necessarily the blended, the key word is the learning. (A16)
>
> e-learning is an old fashion term, we are moving … it’s just learning, and technology enhanced learning – all these various terms are used (A8)

Within a minority of HEIs interviewees produce and reproduce the terms they use to describe blended learning. Technological advancements are continuously opening-up new ways of communication and accessing information amongst learners and faculty within HEIs. To accurately reflect these shifts, some HEIs (re)produce the terms they employ to describe their learning cultures. This practice is evident within two interviewees HEIs at a policy level. These HEIs have developed a long tradition in digital learning. For instance, the interviewee explains that her HEI employs a term that encapsulates the naturalisation of mobile learning into their learning cultures.

> I think blended learning is an out-of-date term and I do not use it here. There is nothing wrong with the term it's just too difficult to define and doesn't mean anything…I think it is a bit 20th century, I prefer to look forward. So here we are using the term 'life integrated learning'. Because on campus we are integrating everything with mobile devices. So, if you wanted a definition of 'blend' that would be it I guess for us. (A2)

Another digital leader A4 explains that his HEI strategically rejects the nomenclature 'eLearning' and 'online', and instead employs a term that embodies a notion of connectivity and connected pedagogies that are facilitated by technologies:

> We have deliberately avoided the use of the word 'online' or 'e-learning' [to describe their online offerings]. In fact, the use of the term [omitted term to preserve anonymity of HEI], it is very much not institution centred but focused on the learner, and the learner being connected wherever they are, regardless of the technology or the methodology…it is a philosophy in actual fact. (A4)

Differing from these interviewees, a third digital leader who reproduces the terms he uses to describe learning with technology, works within a distance education university (which the digital leader describes as a primarily blended institution). This respondent argues that the conventional term used to describe learning within his HEI 'open distance learning', is now inappropriate. This term fails to encapsulate the reality of learning in his sector. He explains that learners are now acquiring knowledge

and learning beyond the structured environments of distance universities due to the development of MOOCs and open educational resources (OER). Discussing the existential change in all HE learning cultures due to the technological advances, this interviewee outlines the term he now employs.

> I think the landscape is changing very fast. So, I am preferring to use the term 'the open education landscape' rather than 'open distance learning' now…the advent of open educational resources and of MOOCs alongside with credit bearing distance e-learning courses means that we have a much wider landscape in our field now, which is in a fast-developmental situation. And if you put that alongside what is happening on campuses [in which technology is naturalized] there is some very significantly different ways to understand our field than I had understood it at least 5 years ago. (A17)

Just one digital leader is wary of the term 'blended learning' based on its historic origins. The term blended learning stems from the corporate sector. Because the term is now widely accepted into HEIs, definitions of the term within HEIs are often based on research into education that is conducted by corporations. As this interviewee believes these definitions do not align with the learning cultures within HEIs, suggests that the term 'blended learning' may never have been appropriate for use within the HE sector.

> The higher ed space moved away from the word 'mixed model' in the early 2000s and adopted the corporate term 'blended… Blended…from our readings and understandings… came from a corporate space and worked its way over into universities and colleges….you see reports from Clayton Christensen in the Institute, the guy from Harvard … he has a book called Disruptive Technologies…famous for a how a technology can replace a business… now it's looking at schools, [listing the names of people] they have got a couple of new reports on blended [models in schools].….because the papers are free people are quick to download and accept them as that is the way that blended happens….that is a school version of things…. So, you see the K12 information out there defining blended – [however] it is different from the way the higher ed space defines blended.

My evidence clearly shows that the terms used to describe learning with technology are shifting. There is a need for HEIs to select terms that privilege learning and recognise that technology is a resource for learning that is now naturalised into learning experiences. In their search for more appropriate terms, several digital leaders propose the term learning. On the other hand, some digital leaders produce and reproduce the terms they use to describe learning with technology. These interviewees feel there is a need to select terms that encapsulate the ongoing shifts in the way learners and faculty are using technology to support their learning, arising from technological innovations. Since interviewees subscribe to a view that the term 'blended learning' does not reflect the reality of learning within their HEIs, leads me to the conclusion that the term is outdated. Findings lead me to a further conclusion that the term blended learning' was perhaps never appropriate for use in the first instance. My evidence shows that technology is a learning resource and therefore it is not necessary to privilege technology use with the nomenclature 'blended learning'. Secondly, the term historically originates from the corporate sector which has resulted in the term being defined in HE through the inappropriate lens of corporate research.

4.3 Understanding Blended Learning: A Matter of Disciplinary Nuances?

4.3.1 Disciplinary Influences on Digital Learning Discourse

My findings, presented below, show that disciplinary cultures shape understandings and assumptions regarding the role and nature of learning with technology within HEIs. My evidence also leads me to claim that the way technology is naturalised into HEIs differs, as disciplinary cultures steer learning experiences.

There is an important relationship between disciplinary cultures and blended learning. Disciplinary cultures shape understandings and assumptions concerning learning with technology within HEIs. Digital leaders share a view that disciplines vary in their traditions of thinking about learning and their practice, which shows there are nuances in disciplinary cultures that influence the nature of discourse about blended learning and learning with technology within HEIs. Nearly all nineteen interviewees working within HEIs create a nexus between disciplinary cultures and blended learning. Of these, two are affiliated with institutions with a specialised focus, over one quarter work within HEIs with two or more faculty areas and the remaining interviewees' HEIs have at minimum five faculty areas. Overall, digital leaders are mindful that there are pedagogic traditions associated with disciplines and their potential impact upon learning experiences with technology. The following response captures the perspectives of interviewees.

> We need to be respectful that disciplines have traditions around the type of pedagogy that lends itself to the discipline…. the pedagogical tradition of the discipline influences therefore the way in which new technologies are used. …… [regarding the integration of blended learning within disciplines] …. just as a journey not a stage that one moves through necessarily, and it's certainly not one that everyone has followed in the same way. (A4)

Disciplinary cultures influence assumptions regarding the nature of blended learning design.

There are distinct traditions of pedagogic practice connected with and valued by certain disciplines as they help achieve the learning intentions associated with a disciplines content area. In the context of learning with technology, these pedagogic conventions play a significant role in shaping blended learning experiences. Digital leaders agree that disciplines often strive to closely align their face-to-face practices

with those they virtually support. This leads me to claim that the way technology is naturalised into HEIs differs, as disciplinary cultures influence the nature of technology use. The majority of interviewees address the ways that disciplinary traditions of thinking about pedagogy and knowledge can intersect with technology. This is encapsulated by one interviewee in the following data extract. This digital leader contends there are disciplines which conventionally focus upon content and these are inclined to use technology to deliver information. On the other hand, he claims that disciplines within the social sciences value interaction and therefore employ technology to facilitate collaborative leaning experiences.

> Some disciplines lean much more to interaction with content, the way in which they then embrace the new technology is going to be far more focused on the content interaction. …Stereotypically the social sciences tend to lean more towards the interaction between learners and use the technologies and understanding the way they can expand the classroom and the learning environment outside of traditional spaces. (A4)

In like manner, several other interviewees who believe that disciplines within the arts, humanities and social sciences value interpretive knowledge and interaction, describe how these pedagogic traditions are sometimes reflected in their use of technology.

> You might have more journals and discussion boards supporting social sciences or students on placement. So, there are different technologies that are useful in different (disciplinary) contexts (A9)

> Something where it's about interpretation or subjective judgement … you know courses about creative writing or poetry… [that are built around feedback] I think it's relatively easy to do sort of boutique courses …. you know we can use things like Illuminate to have to one-to-one tutorials. (A12)

A common discourse also emerges in relation to disciplines that value practical pedagogies. There is a general consensus amongst digital leaders that the health

sciences disciplines customarily utilise practical demonstrations and are therefore predisposed to reproducing these pedagogic approaches using technologies.

> I've seen programs… in terms of performing surgery [within HEIs] about traumatic injury that they did online…. about injections and stuff like…. they were able to show people how to do it [using video demonstrations]. (A8)

> Simulations and animations often come out in the medical field that are quite intensive and extensive. (A18)

One interviewee who acknowledges the traditions of thinking about practice and knowledge within music disciplines, observes that a choral conducting course within his HEI uses videos to capture conducting recitals.

> In the sense of the sort of knowledge and practice of that discipline…. we've got one course which is about choral conducting, and they're actually quite innovative in the way they use online course to do things like share video of people doing conducting, so people get feedback and critique on practice that otherwise wouldn't be visible. (A12)

Disciplinary cultures influence the perceived level of difficulty associated with course redesign.

The difficulty levels associated with blended learning course design are also connected to disciplinary cultures. Digital leaders agree that certain disciplines are more vulnerable to issues with blended learning design, and this again illustrates the nuances in disciplinary cultures that influence the nature of discourse about blended learning and learning with technology within HEIs. Digital leaders share a view that disciplines which value practical demonstrations are more challenging to integrate into a virtual environment. Emphasis is placed by digital leaders upon disciplines within the health and natural sciences, as discussed in the following data extracts.

> Things like Biomedical Science and Biomedical Engineering…. they have huge kind of requirements about practical skills and laboratory work and projects, and it's very difficult to organise. (A3)

> Disciplines as an example that require labs, are much harder to infuse a digital dimension in replacing the labs…. [discussing the nature of biomedical online program, he states the program whilst] ...the nature of the discipline requires a lot of high-end content to be developed [as well as being extremely costly]. (A4)

> I think the disciplines that have very practical skills are more complex to offer. That would cover some of the sciences where you've got laboratory experience, you've got to manage some of the health areas where you've got some clinical settings you've got to manage. Some of the other professions where there are practical hands-on skills. (A17)

To the contrary, almost half of the study population maintains that theory orientated disciplines are easier to integrate into a virtual setting. These disciplines are primarily within the Arts and Humanities. As these disciplines pedagogic conventions are not practical in nature, they are less demanding technologically. The following typifies digital leaders' viewpoints.

> This has been borne out by some research but a lot of practice. When you look at a lot of the courses that are online you see a lot of you know courses from Humanities because they don't require you know mechanical manipulation of an object, or they don't require you know slicing a frog open or something like that, or giving a person a shot. So yes, I think there are disciplines that fit better in an online version than they do in the face to face. (A5)

Disciplinary cultures influence assumptions regarding the value of blended learning to disciplines.

Disciplinary cultures shape understandings and assumptions regarding the value of learning with technology or blended learning. Digital leaders subscribe to a view that blended learning is valued to varying extents within and across disciplines. For instance, over fifty percent of respondents identify a reticence amongst disciplines

within the Arts and Humanities to integrate technology. Oftentimes, these disciplines do not recognise the benefits in formally integrating technology. This is discussed in the following data extracts whereby interviewees claim that the arts and humanities favour face-to-face learning experiences.

> Some of the other subjects in which it would be easier [arts and humanities] maybe culturally it's not quite in the mindset yet of those disciplines. Maybe they don't quite see the potential or the scope or the benefits. (A3)

> Arts & Sciences programme on the other hand banned online learning…. They want only face-to-face instruction … they're traditional [while there are shifting] They just felt they had the 18[or]19-year-old traditional incoming students as freshmen, sophomore, early year … and they didn't want to waver from it, didn't think they needed to waver from that. (A18)

A number of interviewees feel that the Arts and Humanities disciplines are concerned with the quality of learning experiences with technology as is clear in the following.

> We've had e-learning programmes in the Arts, Humanities, but they have not been as successful…there's still a suspicion among lots of academics that it's a dulled down product when it's online. So, it's just about how they feel and how they perceive digital learning in comparison to face contact that they see as vitally important. So, there would be suspicion about technologies. (A14)

In another instance, the interviewee reasons that the Arts and Humanities disciplines value face-to face-practice over online learning, as large student numbers within virtual settings prevent them from using technology in a way that is in keeping with their pedagogic traditions.

> There are some which are easier…computational disciplines …..things which are sort of mathematical or computer science-y, where you can get automated feedback on the correctness of work … not necessarily the quality of that work, but the correctness of that work….those kind of things scale much better than something where it's about interpretation or subjective judgement…… they are much, much, harder to give students feedback in a way that scales online… the issue is whether or not you can do it in a way that's worth doing, you know viable course sizes. (A12)

A further discourse emerges regarding the appropriateness of blended learning experiences within certain disciplines. There are a minority of digital leaders who question the efficacy of practical learning experiences within areas of the health sciences that occur online.

> Medical ends up being an area to blend [owing to massive funding and a national demand for doctors], even though you don't want your doctor trained only through an online experience, and anyone knows that. (A18)

> It goes back to the notion of you know do you want the surgeon who is going to do your bypass, the person who actually does it in real life, or the guy who has got a degree online. …[sometimes] you do need to have a real presence there. (A8)

To the contrary, there are disciplines that value blended learning. Disciplines whose knowledge areas are more dynamic than others recognise that technology offers them flexibility to upskill their learners. These disciplines are more professionally focused as outlined in the following.

> Accounting, or you might have Ethics exams that now get blended after the Enron crisis, and that couldn't get into the textbooks quick enough, so they form a blend … like Accounting or other aspects of business…. where there are new drugs found in the medical field, you might want to have a blended experience. Or … new ways of ultrasound testing of babies… so professional fields that change fast, … education field does change fast sometimes. You know medical, business, law – you can see a need. (A18)

> I think because it's turned into a profession [nursing] that has a requirement for upscaling and professional development…they can get the idea of online, the value of it, much more quickly than people in more traditional academic disciplines who aren't dealing with continuous professional development so much. (A3)

Nearly half of all digital leaders believe that the arts and humanities offer the most potential for meaningful learning experiences with technology due to their traditions of thinking about learning and practice. This is encapsulated in the following data extracts.

> There are some disciplines that are more predisposed to the affordances that technologies bring, that might be more pedagogically transformative. Areas spring to mind like teacher education and nursing, because there's a certain philosophy that also comes….. In some other disciplines either pedagogically speaking there is more of a … without wanting to kind of typeset or be too generalist here … the traditional pedagogy might be more instructionalist … so the way in which technology might be embraced right from the outset is going to be constrained by those sorts of traditions. (A4)

> We are not a discipline college…. (however) there is a split between the qualitative and quantitative disciplines. There is a bigger embracing of blended learning amongst the qualitative disciplines [in ways that are pedagogically effective]. (A16)

> You can have them just as good or even better in more sort of qualitative sort of theoretical courses. [such as arts and humanities]. (A15)

My evidence shows that disciplines differ in their traditions of thinking about practice, learning, and what constitutes knowing. Their cultures influence in different ways, understandings and assumptions surrounding the nature of learning experiences with technology, the levels of difficulties experienced by disciplines designing virtual learning experiences, and the value of blended learning to disciplines. This leads me to the conclusion that there are nuances in disciplinary cultures that influence the nature of discourse surrounding blended learning and learning with technology within HEIs. My evidence leads me to conclude that the way technology is naturalised into HEIs differs as disciplines steer practice.

4.3.2 Disciplines Matter, But Learning Matters More.

My evidence, outlined below, leads me to claim that while disciplinary nuances are important when it comes to learning with technology, the focus must be on learning.

While disciplinary cultures influence assumptions surrounding the appropriateness of blended learning to disciplines, digital leaders subscribe to the view

that the learning aim of those within disciplines is what matters most, particularly how it meets with learners' diverse needs. This leads me to claim that while disciplinary nuances are important when it comes to learning with technology, the focus must be on learning. Over one third of interviewees indicate that learning aims must be privileged over disciplinary cultures when it comes to learning with technology. This is captured in the following data extract.

> Probably about 5 or 6 years ago … I spent an awful lot of time trying to work out whether there were different pedagogies and different learning technologies suitable for different disciplines, but I have left that behind now, I honestly don't think it's really a great line of enquiry. It's much better to focus on the learning outcomes and the way they can be achieved than to try and say that certain things are more or less suitable. (A2)

Another interviewee who acknowledges that learning aims of the programme are important, emphasises that the benefits of blended learning to learners must be considered above all else.

> I don't think blended lends itself to any one discipline over the other. In other words, if you're going to go with a blended model, I think it can be equally effective in any discipline areas. … from my perspective it's really a matter of the requirements of the programme and the benefit to the programme … and most importantly to the student … rather than to the discipline. (A5)

In the same vein, a further interviewee stresses that learners' identities and their learning requirements in relation to their area of study should steer the nature of learning experiences with technology rather than the discipline. Discussing this in the following extract, the leader points to the fact that there is no one size fits all approach to learning experiences with technology since learners differ in their respective learning needs.

> [While disciplines influence the nature of learning experience, we cannot make s regarding practice. Discussing the nature of a program he stresses it is] not typical but atypical… because there is no single one model here … I keep emphasising that point. If you understand your learners are different, you

> understand your learning intentions will be different … the outcomes and solutions you come up will be different as well. (A4)

Differing from other interviewees, one digital leader discusses her findings following years of research into digital learning. Although disciplines play a role in shaping learning experiences with technology, this interviewee concludes that the efficacy of learning experiences with technology is ultimately dependent upon the learning purpose. In the following data extract, the interviewee connects the purpose of learning with faculty assumptions in relation to learning needs.

> When you ask the question is it disciplinary relevant – well yes, but lots of disciplines use these sorts of forums [that are discussion based and are often effective] … really at the end of the day technology or not, it really depends a lot on what the instructor does, on their beliefs of what the student should be upon graduation, or at the end of their course … or you know what is the purpose of learning. (A7)

My evidence shows that while there are nuances in disciplinary cultures that influence assumptions surrounding the appropriateness of blended learning, these must not steer decisions regarding learning with technology. Instead, what matters more is how technology benefits the learning aim of the discipline and, most importantly, the interrelated learning requirements of learners. This leads me to the conclusion that while disciplinary cultures are important when it comes to learning with technology, the focus must be on learning and connecting learning experiences with learners' distinct needs.

4.4 Discussion/Conclusion

The challenge of defining blended learning and the interrelated ambiguity encircling the term identified in this study is evident across the entire history of

blended learning literature. For example, the first chapter of one of the earliest blended learning handbooks composed in 2006, identifies the coexistence of multiple definitions of blended learning in HE (Bonk & Graham, 2012). In 2012, Friesen (2012) publishes a comprehensive report detailing the evolution and multiplicity of blended learning definitions over more than a ten-year period. More recently, a review by Smith and Hill (2018) of 97 articles over a five-year period concludes there is an absence of a shared definition of the term. Indeed, since blended learning is open to multiple interpretations, the starting point for most researchers in the area of blended learning is clarifying their definitional standpoint.

Findings in this study are overwhelming in showing that blended learning is just learning. Technology is considered a learning resource now naturalised into HE learning cultures, and into individuals learning identities. For these reasons, the nomenclature of blended and digital learning is both inappropriate and outdated. Contrary to findings which identify the nomenclature of blended as inappropriate, very little can be found in the literature that supports these findings. The conflict between face-to-face versus virtual learning identified by Albrecht (2006) over a decade ago continues today. A large volume of research in the field of blended learning focuses upon the efficacy of a digital learning approach (Zhang & Zhu, 2016). Moreover, the large volume of blended learning comparative research can be seen in Drysdale et al. (2013) analysis of the trends in blended learning research theses (doctoral/masters). Their study of 205 dissertations finds that over 50% of studies investigate learning outcomes, particularly those across different learning environments, whilst over a quarter are entirely comparative in nature. By identifying blended learning as a learning approach distinct from face-to-face learning, these studies arguably privilege technology use over learning.

This study demonstrates that learning with technology is now naturalised into the learning cultures within HEIs. Findings are contrary to prior research that identifies blended learning as yet to become widespread within HEIs. For example, recent literature reviews conclude that digital learning is not yet widespread in HEIs (Smith & Hill, 2018; Zhang & Zhu, 2016). Likewise, empirical studies are growingly concerned with BL/technology adoption/diffusion within HEIs (Bokolo et al., 2020; Liu et al., 2020; Porter & Graham, 2016). Take for instance, a research focus upon ways of institutionalising blended learning is becoming increasingly popular (Graham et al., 2013; Mihai et al., 2021). While it is noteworthy that a portion of these studies interrelate the concept of adoption with the efficacy of learning experiences as well as faculty uptake, arguably their use of the term blended learning identifies blended learning as an approach distinct from learning. This overlooks the nuances of learning process that shape learning experiences with technology identified in this study.

The results of this study corroborate the work of a minority of researchers. The earlier research of Moskal et al. (2013) and Mason and Rennie (2006) presupposed that terms specific to learning with technology such as blended learning would likely be outdated by this time. The authors' assumptions broadly support findings in this study that identify a 'forward' looking discourse concerning the terminology for learning with technology. Also corresponding with findings are a small number of researchers who suggest that definitions of blended learning overlook pedagogy (Torrisi-Steele, 2011) and learning (Oliver & Trigwell, 2005). As an example, Friesen, (2012, p. 9) following a review of definitions concludes that blended learning is simply a "design construct" and therefore the priority must be how learning with technology prioritises learners needs. There are some consistencies between findings and a recent study by Dziuban, Graham, Moskal, Norberg, and Sicilia (2018) reporting that ICT

use is widespread in HE, and that learners' perceptions are at the core of blended learning. At the same time, these authors regard blended learning as something that existed prior to ICT use and suggest that blended learning with virtual technologies is the 'new normal' within HEIs. This runs counter to findings as their use of the term blended learning give technology equal status to learning.

The evidence presented in this study most closely aligns with an earlier paper composed by Oliver and Trigwell (2005) and to an extent the earlier writings of Meyer, (2005). Both authors' work is addressed in a review of BL definitions by Friesen (2012, p. 9). An article by Oliver and Trigwell (2005) entitled 'Can 'Blended Learning' Be redeemed?' critiques the nomenclature 'blended learning'. The authors question the terms usefulness since it fails to promote understanding of the nature of practice, especially to researchers. Consistent with this study, they argue that blended learning describes all learning experiences within HEIs, and employing the term automatically disregards learning from the perspective of learners. In their detailed review of blended learning definitions, they suggest the most effective interpretations are those associated with pedagogy which are unsuitable as they overlook learning. Oliver and Trigwell (2005) conclude, by proposing that blended learning be viewed through the lens of variation theory to forefront learners, pedagogy, and experiences. Their conclusion corresponds with findings in this study that shows there is a complexity with understanding learning as it is shaped by sociocultural contexts. Leaders in the study strongly emphasise the centrality of learners' diverse need in steering learning experiences with technology. Similar to findings in this study, Meyer (2005) warns against employing metaphors for virtual learning as they imply a different learning approach. In sum, this chapter is largely conceptual in nature, the following chapter 5 explores practices within HEIs.

Chapter 5 Foregrounding Pedagogy, Backgrounding Technology?

5.1 Introduction

Learning with technology can be meaningfully supported through community and connection. Chapter 5 explores this theme within three major sections. The opening section centres upon meaningful assessment approaches, more specifically what I have termed 'assessment as learning'. It also addresses how the technological, virtual, or blended setting can facilitate a complex mix of assessment methods that promote learning. The second major section explores the role of effective faculty development, specifically through community type collaborations in the meaningful usage of technology for pedagogy. The section also identifies the supports and key enablers required at an institutional level to realise the possibilities of learning development and design with technology. Following the presentation of key evidence, a discussion of the analysis is offered in the final major section of the chapter.

5.2 Assessment as Learning: Meaningful Assessment is Formative and Collaborative

5.2.1 Technology an enabler of 'Assessment as Learning'

Assessment approaches that are formative and collaborative are believed to help improve learning quality and learners' competencies in relation to their discipline.

Assessment, in general, is a significant area of focus for HEIs as it steers the nature of learning experiences and is usually linked to the learning outcomes sought. Traditionally summative assessment, designed to evaluate the extent to which the

planned learning outcomes are achieved and demonstrated by learners, is familiar to all learners and tutors in HEIs. It is the kind of assessment most associated with end-of-term, end-of-module, or end of year assessments. It is commonly individualised and often in the form of a written exam, although it may involve a variety of approaches. The point to note is its purpose, which is to check on the learning achieved by the student. The kind of assessment explored in this section is the kind that is designed to promote learning itself, although the two types (summative and formative) are interlinked. Assessment as a form of learning, can be more continuous, dynamic, flexible, and 'in the moment' assessment, as well as planned perhaps to involve peer tutoring/assessment, self-assessment, and can benefit from, indeed require, collaboration with others. The focus, therefore, arising from the data analysis, is how can technology impact this kind of assessment? Is the use of technology a constraint or an enabler in this regard? How, according to the understandings of my participants, is the technological dimension able to connect with learners' needs?

My interviewees share a view that assessment approaches that are formative and collaborative improve the learning quality and learners' competencies and help overcome constraints to learning success. Moreover, most take it for granted that a blended or virtual learning environment has this affordance. The following quote from interviewee A4 explains that assessment informs teaching and learning approaches, thus the learner's experiences with technology are integrated into assessment. This interviewee makes the important point that assessment is bound up with the pedagogy and of course the pedagogy is enabled through technology. This interviewee is typical of other respondents in explicitly stating or merely assuming that the technological and the pedagogical are enmeshed.

> In assessment, we actually change the student experience...it's a very important area to focus on…assessment doesn't sit outside of pedagogy, it's inside of pedagogy. (A4)

Assessment as learning, involves feedback generated through collaboration. It focuses on improving the quality of learning and learners' competencies in their disciplinary field. Interviewees refer to peer-to-peer, faculty-learner, and/or participatory type assessment approaches as beneficial to learners. These assessment approaches engage learners actively in the learning process, hence the title of my heading for this section. A further point made by several interviewees is that assessment and feedback are mutually inclusive. For instance, in the following data extract interviewee A2 identifies feedback as a key component of assessment. The interviewee also specifies that faculty-learner feedback is integral to learner's success and a core element of contemporary learning design. For this reason, the leader explains that faculty-learner feedback is a requirement from all faculty within the interviewees' HEIs and crucially is inbuilt into learning design with technology.

> [All faculty are expected to provide feedback throughout courses] … it's a major role in the 21st century…not something you might or might not offer – it's absolutely imperative, it's just as important as assessment, it's not separate from assessment, it's integrated into it. [Designing courses] ...you design [to] maximise the opportunities for faculty feedback… that's the view of learning design in the future. (A2)

In a similar vein, interviewee A10B acknowledges the indistinct lines between formative assessment and interaction. To illustrate this, the interviewee explains that interaction is integrated into practice within his HEI. This is a means of developing upon learners' competencies which is akin to formative assessment.

> I think it's a blurred line between interaction and formative assessments in some ways because that interaction is working you know within students' ability to improve their competency. So, I mean (inaudible) interaction, and by extension it's being used for formative assessment. (A10B)

Another interviewee, A18, who also regards feedback as assessment and necessary for learning suggests that meaningful assessment demands adopting an environmental approach. Put plainly, using the environment or the surround as a vehicle for fostering learning. This may mean other people or resources in the immediate environment. The interviewee adopts a critical stance on assessment and uses learners as resources within the classroom. In the following, he explains that when learners are resources, assessment concerns learner performances, interactions, and other tools that are available in the setting. Assessment practices involve feedback from multiple sources such as peers, expert peers or mentors say within industry, a variety of instructors or even individual self-assessment. The origins of feedback may vary and are certainly not confined to that which may be offered by the tutor.

> Dimensional assessment…. [evaluation] from a critical thinking standpoint [focuses on] the persuasiveness of one's work. … [because] peers are a resource… you've got to assess that some way … feedback which is assessment [can be used without grade] …the important thing about online and blended is getting feedback on what we do. [Examples being] … from... instructor, [previous] students…. real world experts… system feedback… peers… assessments might be multipronged and varied……. an environmental psychology approach … the instructor's not the only thing that's important in teaching. (A18)

Participant A17 echoes this view by noting that assessment does not merely concern grades, it must also improve learning. In the following, the interviewee discusses how personalised faculty-learner feedback that is commonplace within his HEI, feeds-forward student learning helping them to improve.

> We have, generally speaking, a division in every module's assessment between continuous and final assessment… the continuous assessment side, that is assessed by a tutor who teaches with feedback to the students, so it's not just a grade, it's also at least as importantly tutor feedback which relates to the individual student's work and helps the student improve. So, I think that's the most significant instrument we have…. It's expensive to do it the way we do it, but I think it's productive and helpful to students. (A17)

Another Participant A2, differs from this interviewee by discussing the nexus between peer assessment and learners' progression. The interviewee explains how a developmental assessment model is utilised within their entirely online offering. This model is heavily based upon using peers to support and assess one another, even though summative assessment is also required.

> Every course would have its own approach to assessment...but [University name] Online [offerings] uses [model name] … so obviously there's a huge amount of teamwork in peer support and peer assessment going on... summative assessment tends to be fairly traditional [this is fast-changing as a project area is moving summative/feedback online]. (A2)

A key finding in this research is that technology itself or learning remotely in a virtual environment is no barrier to the use of more contemporary methods of assessment. The nature of assessments I refer to, are those which involve learners in negotiating their learning through peer and self-assessment and through receiving feedback from a variety of sources. It is noteworthy that the essence of formative assessment (i.e., the kind that shapes identity) involves feedback that the learner is able to use, in order to bridge the gap between what they do and need to be able to do, or what they know and need to know.

The issues learners experience when learning formally with technology often relate to pedagogy rather than technology. Most interviewees feel that the most prevalent issues for learners' circle around insufficient social interaction with peers, or inadequate interaction between learners and faculty. Since assessment through collaboration generates formative feedback that is valued by learners, formative assessment through collaboration can, according to my interviewees, connect with learners' needs when learning with technology. Insufficient or inadequate interaction with and feedback from faculty, is a constraint experienced by learners that is

identified most often by interviewees. In particular, a shortfall in individualised and timely formative feedback from faculty is what learners' value. However, the technological format is assumed to afford learners access to the thinking of their peers and to developing understanding in a safe and engaging environment. This constraint is closely followed by limited opportunities for discourse and/or peer-to-peer learning. The following are typical responses which discuss the issue concerning faculty-learner feedback.

> One of the criticisms of feedback is that it's often not on time, it's often of mediocre quality… or there's other strands that they just don't understand. (A1)
>
> We have not had a particularly good feedback from our students about the type of feedback we provide to them in [a national level survey for students]. We are ranked quite lowly. (A16)
>
> [Feedback to large student numbers is difficult] it's anecdotal, we have no data on it… we know that a lot of students complain about how slow it is to get that feedback… we need to develop techniques for CAM-ed feedback, for repetition of previous feedback, for annotating PDF files electronically … we're aware of the tricks, but we haven't had the capacity to get a training programme for staff on. (A13)

Interviewee A1 who addresses insufficient opportunities for collaboration experienced by learners learning online, explains that this is a limitation experienced in all learning environments by learners.

> The kind of usual things that happen outside of digital seem to emerge that – not enough time, more time for discussion, more time with peers. So, I guess it is what expectations people have (A1)

A small number of the participants who address the importance of social collaboration online, indicate that a need for collaboration is greater in virtual environments due to a risk of learners experiencing isolation without a face-to-face component.

> The difficulty is the lack of a social interaction if you're there at your own desktop in a remote part of the country … while there may be 20 more or maybe 200 more linked in simultaneously, you still don't get that sense of social cohesion and interaction with the group (A11)

> There's hundreds and thousands of difficulties…. the general and obvious ones…time management …If it's not a course that's based on working together online then people could be isolated, you know the tyranny of distance. (A2)

There is awareness on the part of interviewees that the technology of distance learning poses particular issues and challenges but, that these can be overcome. For instance, like interviewee A2 above, participant A13 suggests that entirely remote learners can be challenged by a shortfall in faculty feedback/interaction. This is avoidable when learners are taught by faculty who are competent at using technology to facilitate learning.

> We would probably be more aware of problems with our distance learners and online [rather than blended] … that would possibly be mostly the responsiveness of … well the competencies of staff teaching in an online environment and the responsiveness to queries and problems. Those are not a problem where the staff are competent are teaching …. where they are responsive to queries by the students, there's absolutely no problems with learning in the online distance programmes, or virtually none. (A13)

Within the HEI of interviewee A14, it can be difficult to achieve learning outcomes due to a scarcity in appropriate synchronous technologies that facilitate interactions. In recognition of the value of community to learner progression in both online and blended courses, a strategic focus of the HEI is procuring relevant technologies to overcome this challenge.

> We don't have any good quality synchronous technologies… a major difficulty in all our distance learning courses and blended provision is developing an online sense of community. We really do see value in that synchronous face to face … a bit like the chat we're having now on Skype – academic teams are using Skype, Google Hangouts, and things like that to achieve the same learning outcomes. (A14)

Providing timely and individualised feedback to learners can be challenging for faculty due to large student numbers when it comes to learning with technology. However, most interviewees believe that meaningful feedback to large student numbers is possible through assessment/feedback approaches that involve collaboration. While it is easy to provide quantitative type feedback through an automated assessment such as quizzes, most interviewees acknowledge that qualitative and timely faculty-learner feedback is difficult. This is less of an issue within a minority of interviewees' HEIs which limit their student numbers and/or are smaller in size. Many interviewees feel that peer-to-peer or participatory type approaches to assessment are an alternate way of providing meaningful feedback to learners. For example, the following interviewee A5 acknowledges that on-time and individualised faculty-learner feedback is challenging when dealing with large student numbers. He proposes that peer-to-peer assessment can help overcome this challenge. The interviewee also identifies a need for discourse within HEIs that addresses the issues of providing high quality feedback to large student numbers.

> Providing students with meaningful, timely, personalised assessment feedback gets really difficult as you begin to increase those numbers…. [there is] less personalised feedback and more sort of rote feedback, machine generated feedback…the faculty member cannot deal with the sheer volume of students. [therefore] methodologies like peer-to-peer assessment or automated assessment, robot assessment … has to be all part of the conversation… the critical dimension is how do you maintain the quality of feedback while teaching students at a 50 or 100 population. (A5)

Participant A15 discusses the work of a presenter at a recent conference. He suggests that effective feedback/assessment when dealing with large student numbers is only possible through "participatory assessment". This approach which combines peer feedback, self-assessment, and feedback from faculty, avoids a one-size-fits-all approach to feedback.

> I think in any environment [feedback is an issue] … I was just at a session … showing some ways to really show more meaningful feedback… in larger classes, [it must be] what he [the presenter] terms 'participatory assessment'… a 360 business… a triad approach..a greater mix of both the self and peer assessment, it's just not instructor assessment… it makes sense…you can automate sort of machine feedback for large numbers, but you can't give the personal teacher feedback [therefore you need] … a peer network and for the individual to take responsibility to assess her or himself. (A15)

Interviewee A8 suggests that along with faculty feedback related to assignments, it is important to have feedback systems in place that facilitate peer interactions with or without the support of assistance/tutors. Virtual discussion forums which are easy to create help alleviate pressure on faculty to be available 24/7 and most importantly support learners ongoing needs.

> It's not just about the feedback on the assignments, it's the feedback on the discussion forums [with/without a student assistant] … that 24-hour professor thing …. communications and the feedback strategy in place with students…… with discussion forums …if a student has a question it has to go to a discussion forum first of all as opposed to coming to me, and that way everybody can benefit… (A8)

Another digital leader A10B points to a growing volume of research demonstrating the efficacy of peer-assessment. In the following extract, the interviewee describes the nature of peer assessment integrated into MOOCs under development within their HEI. The interviewee explains that learners are required to mark assessments using rubrics. Prior to being authorised to peer assess, learners must mark several assignments that are quality checked against the marks of the professor to ensure their grading is comparable.

> In the MOOCs…we will be using peer assessment… students submit a task, then they use a rubric, and they are calibrated... the first X number of scripts are calibrated against a professor's marking of those scripts. Once the students are calibrated or they're making with a certain percentile of the professor's grading, then they were permitted to mark peers' work. [5/6 peers]. …research has shown that if the rubric is clear … student grading of work will be very, very close to staff grading of work. (A10B)

Arguably, an important educational dimension of this approach is that learners really get to know and understand the assessment criteria against which their work is judged. This is a key point in getting on the inside of one's discipline. Such an approach over time allows the learner to acquire an understanding of the internal architecture or structure of a discipline.

Rather than using peer assessment, several interviewees' HEIs provide faculty-learner feedback through team teaching or by breaking learners into groups and working with faculty/tutor. In the following, participant A9 explains how working collaboratively in teams with faculty members facilitates the provision of qualitative formative feedback to large student numbers.

> Personally [the interviewee has not experienced issues with providing feedback to large numbers] … I have taught up to a group of over 200 students with colleagues as a team and we used online technology substantially for that. (A9)

In the same vein, digital leader A3 discusses how learners are divided into groups within their HEI, and extra tutors are employed as a means of guaranteeing that all learners receive feedback. While the interviewee acknowledges the potential in peer feedback, he considers tutor feedback to be more helpful to learners particularly in advanced courses.

> Fairly advanced level courses, … [formative feedback from tutor is key] …teaching presence... is really, really important... in practice… a staff student ratio… tends to be 15 to 20 students per tutor…if we have hundreds on a course then we employ a lot of part time tutors …. If you're trying to engage people at the deeper intellectual levels…it's very difficult unless you can provide people with feedback. Some ... programmes will use peer feedback, that's not the same as tutor feedback, but that has its role. (A3)

This data shows that formative assessment which generates feedback through collaboration is valuable to learners as it focuses upon improving the learning quality and developing learners' competencies in relation to their areas of study. Digital

leaders also regard feedback through collaboration as valuable to learners, as from their experiences the prevalent issues for learners revolve around insufficient social interaction with peers, or inadequate interaction between learners and faculty. Although providing learners with timely and individualised feedback can be challenging for faculty due to large student numbers, the issues can be overcome through peer assessment or participatory type approaches that draw from multiple sources. Collectively, the evidence shows that interaction and feedback are integral to learners' success with technology, which leads to the conclusion that formative assessment through collaboration connects with learners' needs when learning with technology.

5.2.2 A Need/Potential to Diversify Assessment Practice

The evidence, presented in this section, shows there is a need for HEIs to diversify and utilise a greater variety of assessments, in addition to summative forms. Particular emphasis is given by interviewees to formative assessment approaches that facilitate collaboration. The data also shows that virtual environments facilitate assessment approaches that support learner identity development in their disciplinary field. This is not to suggest that summative assessment is irrelevant, it clearly is, but the point interviewees seem to be in agreement on, is that the balance between the two purposes of assessment (formative and summative) outlined earlier in the chapter needs to be considered carefully by faculty. It would seem that the formative purpose and the formative approaches need to be and can be made an integral part of learning with technology. Formative and summative assessment and feedback practices are evident within most interviewees' HEIs. However, interviewees identify a need for HEIs to diversify assessment and integrate formative assessment practices that

facilitate collaboration. Whilst technology is being used to diversify assessments in some HEIs, over a third of interviewees consider the dominant assessment model within their HEIs to be summative, and often at the end of course. Furthermore, widespread formative assessment approaches are often considered basic and limit opportunities for interaction. Assessment is to a great extent teacher-centric, despite the potential of virtual environments to support meaningful assessment. Many interviewees agree that virtual environments naturally facilitate assessment approaches that engage learners actively in the assessment process, which may help with developing learners lifelong learning attitudes and skills. The possibilities of assessment when it comes to blended learning are discussed by participant A15. In the next data extract, the interviewee argues that learning with technology naturally moves the focus onto learners and nurtures "authentic assessment" that incorporates learning beyond HEIs.

> It's much more about … authentic assessment... you're not looking at just writing papers and projects …standardised final exams just for one person, the faculty member … you've got much more of an authentic sort of an enquiry-based assignment taking place... the blend actually takes place again with learning that's taking place outside of the classroom... blended learning... it really changes the nature of assessment to make it more authentic. (A15)

Another interviewee A10B likewise discusses how learning and assessment with technology benefits learners' professional careers. Taking e-portfolios as the example, the participant explains in the following extract that formative assessment with technology can be used by learners as either a resource in the workplace or to exhibit their work.

> With technology – there's a potential to be portable, so students create work and then they can take that beyond the higher education institution to the workplace, like an e-portfolio for example that they have developed formatively over a period of time… it could then be taken as a tool for employment, or as even a showcase (A10B)

Participant A12 describes ways in which technology is being used in assessment practices to connect institutional learning with professional practice. In the next extract, he indicates that technology is used by learners in choral conducting courses to create videos, whilst e-portfolios are used in other courses to illustrate learner's workplace learning.

> [In addition to essay assignments] ...we do have quite a wide range of alternative forms of assessment in each area… choral conducting one, which is videos of performance… portfolio-based ones which are more to do with work related artefacts (A12)

Assessment practices within many HEIs have yet to realise the possibilities of assessment with technology in practice. For instance, interviewee A18 who discusses assessment more broadly across HEIs rather than his HEI, maintains HEIs over-associate assessment with grades, rather than improving the learning quality of learning. The interviewee identifies a need for HEIs to move away from assessment practice that views learners as passive recipients of information. Instead, multiple stakeholders must be engaged actively in the assessment process.

> Are you asking assessment about the work being performed and the quality, or are you asking about assessment in terms of the grade that's derived…. there might be two different ways? When you ask this question to most people...[they] talk about the grade being derived…We have to stop thinking about a course being taught by an instructor and imparting from his head into the laps of the students… everybody in every piece of that learning environment is important…. (A18)

Interviewee A15 echoes a need for HEIs more generally to break free from summative high-stake assessment. In the following extract, the interviewee explains that blended learning assessment is often identical to face-to-face practice. It focuses on information recall rather than supporting learners through interaction.

> Unfortunately, I think sometimes [blended learning] it can be exactly the same [as face-to-face learning] … in my case the problem with a lot of face-to-face learning – it's based on information delivery, it's based on just pumping out … you know lecturing, talking at students, and then assessment. It's not about

> conversation, it's just talking about students – students can't understand the assessment because they're not there. (A15)

Interviewee A19, who is the only interviewee not working within a HEI, also argues that the overarching model within HEIs is individualistic. In the following the interviewee proposes that HEIs rethink their notions of assessment and learning. The focus must be on ensuring that learners have the lifelong learning skillsets/reflective aptitudes to ensure that contemporary learners are capable of learning quickly.

> The central issue we face as a species is that we need to learn how to learn very quickly or else we are going to self-destroy…so, having institutions of learning I think is really important, but, having institutions that claim to be the only place where learning takes place…that is a serious problem…if a school thinks, here you learn and then in the world you apply, I think that is a very serious problem…there is way too much focus on curriculum, and the transmission of a curriculum, and the tests that the curriculum has made it into the students head…I think that has passed. (A19)
>
> What I propose is a shift of focus from the curriculum to identity… [whereby faculty are a pedagogic resource and learning is social and participatory involving learners and faculty]. (A19)

Addressing the nature of assessment practices within his HEI, participant A8 identifies an erroneous assumption amongst some faculty that blended learning assessment is conflated with multiple choice quizzes. He indicates a demand for face-to-face summative assessment within disciplines such as engineering, law, and accountancy. These disciplines are jointly accredited with professional bodies. Equally noteworthy he states that summative assessment mostly takes place within face-to-face settings, due to a fear of plagiarism. As a champion in the area of digital learning, the interviewee strives to encourage the adoption of more formative approaches.

> Most people tend to regard online as you know multiple choice quizzes etc, which of course it's not. ….[while there are innovative assessments evident] …I walked down to [campus name] last week and I saw lots of students sitting down doing repeat exams ….a lot of our courses are aligned to professional bodies [such as engineering /law/accountancy] … they insist that everything has to be exam based – the traditional invigilated exam is the only way to

> actually certify… what we have to do …[is] say well ...you know students [can] also perhaps even have a better learning experience doing different forms of assessment…it's slowly taking on. (A8)

Similarly, interviewee A14 suggests that assessment in the blended context generally involves multiple choice quizzes and essay assignments within his HEI. Faculty are more comfortable with these approaches.

> For our blended provision it's all multiple-choice quizzes, and we do quite a lot of lab-based exercises where we maybe have 100, 120 students completing multiple choice quizzes at any one time. We also use Turnitin for assessment and feedback… [while distance learning considering outreach centres and examinations online] … I must admit that our academic community are quite uncomfortable of that at this stage, and multiple-choice quizzes and online essay questions are about as far as we've got as an institution. (A14)

Within participant A3's HEI, blended learning assessment practices are broader and are steered by the disciplinary areas. The interviewee explains that some courses retain the traditional summative exam whilst others use portfolios or quizzes. Yet, like several other HEIs, there is a demand for face-to-face summative assessment. This requirement is evident more-so in programmes run in conjunction with other HEIs and relates to a fear of plagiarism.

> …some of them will have an exam, a traditional exam, but others will have … coursework and materials that they'll compile. It depends on the subject…Some produce reflective portfolios and others will produce … quizzes and collate lots of small tests along the way… But… there's a couple of programmes which the University runs with [an overseas university, and] …because they have quite strict regulations to check academic integrity, in some of those cases… the students would actually have to attend a local exam centre. (A3)

Another Interviewee A16 explains that there is a requirement for face-to-face summative assessment in over half of all courses. In the following extract the interviewee highlights that assessment practices using technology are basic and have not gone beyond electronic assignment submission and marking.

> [electronic submission of assignments and electronic marking is commonplace] …, there hasn't been the level of impact of technology on diversifying the type of assessment. … 65% of students at the [name of HEI] … the only assessment they will do will be high stakes formal exams – written exams in a room in exam conditions. 65% won't do any essays, some will do no formative assessment…there's no real blended approach to that, other than … you know dragging out a 2B pencil and filling in some sheets … which I wouldn't exactly count as blended. (A16)

Further into our interview this participant (A16) comments that a key focus at a national level is the move towards collaborative approaches to learning and assessment. Learners do not value the transmissive form of virtual learning and assessment. Discussing a report being compiled following a visit to several international HEIs in another country, the interviewee highlights that these HEIs experience greater learner satisfaction in virtual learning environments. The HEIs have successfully addressed issues that include faculty-peer interaction.

> [research shows that fee-paying learners] expect a face-to-face experience….in terms of contact directly with academic staff [which is] critical to their university experience [within his country] … the data out of [name of a different country] is nowhere near as definitive as that… I'm just writing up the report … [based upon several HEIs in this country which he visited] … all of them have already addressed so many of those issues around what it means to interact and engage with professors and peers, what it means to be a student at [HEI name] ... [MOOCs often support face-to-face learning in these HEIs] … if you can address the issues around the primacy of the lecture... non diversification of assessment… the notion of education as a custom service transaction, then you can build blended learning in a way that that enhances student satisfaction. (A16)

This evidence is persuasive in showing that summative assessment is common within many HEIs. This is sometimes linked to joint accreditation with professional bodies and other HEIs. Whilst innovative formative assessments are evident within interviewees' HEIs, essay assignments and multiple-choice type quizzes tend to dominate. It would appear that there is a need for HEIs to diversify assessment to integrate more formative assessment approaches that facilitate collaboration, valued by learners. This leads to the conclusion that formative assessment through

collaboration is not only possible with technology-based learning but, that the technological dimension actually facilitates it. Another conclusion emerging from this data analysis is the interviewees really privilege the significance of pedagogy itself, how their ideas assume that pedagogy is to be foregrounded, and that the technology is the servant of the pedagogy. This, I believe, is a significant contribution to the thinking/knowledge about technology-based learning as it foregrounds the importance of pedagogy and instrumentalises technology as a means to the bigger purpose which is learning.

5.3 Faculty Development is Critical

5.3.1 A Need for Faculty Development

This section will show that faculty lack pedagogic knowledge and design competencies when it comes to integrating technology into their practice. It also shows that faculty development plays a crucial role in growing faculty knowledge and skillsets concerning learning design with technology.

Faculty do not always find learning and teaching with technology straightforward, especially as many may not have experience of that mode of teaching from their own learning experiences. More specifically, faculty can lack pedagogic knowledge and design competencies when it comes to integrating technology into their practice, in a way that effectively supports learners. These challenges, from the standpoint of digital leaders, lessen the quality of learning experiences with technology and can discourage faculty from integrating technology into their practice. Therefore, there is a need for faculty to have opportunities to consider all aspects of their teaching using technology. This section presents the digital leaders' experiences

and conceptions of faculty knowledge and competencies in relation to technology, and their perspectives on the crucial role of faculty development. An overarching concern for over half of the interviewees is a shortfall in knowledge amongst faculty when it comes to course redesign with technology. Further issues identified by interviewees revolve around inadequate technological competencies and low confidence levels amongst faculty, or indeed positivist pedagogical orientations amongst faculty. The following is a typical response in which interviewee A1 highlights that faculty can be oblivious to the pedagogical possibilities of learning with technology. The digital leader also maintains that faculty have insufficient skillsets and confidence to integrate technology into their practice in pedagogically meaningful ways. In tackling these issues faculty development in eLearning is a strategic priority of the digital leader's HEI.

> I suppose what seems to hinder [faculty]...is first of all knowledge – knowledge of what's possible and what's available [technologies/supports] ... the second part is the confidence and competence to do it. (A1)
>
> [university] is committed to [faculty development] ... by the [year], all staff teaching will have some certification of teaching and learning, which will have to include e-learning… rather than using a hammer approach is to let people see the value and build up a matrix. (A1)

Participant A8 also believes that faculty can sometimes be unaware of the pedagogic potential of blended learning. In the following the interviewee comments that faculty can regard digital learning as the simple transmission of information.

> A lot of it's to do with as I say imagination and that, but often we lack imagination. Maybe it's because we don't know the possibilities of some of the technologies we have, we tend to regard them as quite I suppose static to some extent to know that here's my book online or here's my notes online, read them and that'll do you … as opposed to something that could be much richer (A8)

This digital leader also draws attention to the role of faculty development in shifting faculty perceptions and practices concerning digital learning. Commenting on

this in the next extract, he remarks that faculty who partake in faculty development programmes are positively influencing the pedagogic practices of other staff.

> [Faculty development programs] we're finding more and more is that people who are doing these programmes are the ones who are actually making a huge difference… they are the people who are doing significant things … affecting other people around us… once people start to think seriously about it or systematically or theoretically about it. (A8)

Another interviewee A6 expresses her surprise on uncovering a shortfall in faculty pedagogic knowledge concerning technology use. Like other interviewees, the digital leader explains that faculty development has effected a gradual shift in faculty practice towards more meaningful pedagogies.

> I sort of came in all guns blazing with pedagogy… and then the reality of what people could do became very apparent… [however through faculty development] we're definitely getting there [pedagogy is improving]. (A6)

For some interviewees, faculty constraints relate to their inability to use technology. This is typified in the following response of participant A13.

> Perceived difficulty of the use of technology … perceived and actual difficulty of the use of technology. (A13)

In a similar vein, interviewee A11 indicates that faculty are apprehensive of technology, and argues that faculty development is integral to the success of blended learning as it improves faculty competencies and grows faculty confidence levels.

> I think [faculty development] is critical because staff while interested are scared, and they're scared of technology, and they need to be taken by the hand and shown that this is achievable, that you can do this … and once they get over that hump, they will embrace it. So, without providing that (inaudible) and upskilling they're never going to get it off the ground. (A11)

A general lack of confidence amongst some faculty when it comes to blended learning is pointed to by other interviewees. Echoing the views of most digital leaders, these interviewees explain that faculty development plays a vital role in helping

faculty innovate their pedagogic practices with technology. The following is a typical response.

> I think it's an individual teacher difference as to how comfortable they feel. … and our job [as a learning support unit] is really to help staff open up their classrooms to innovation. (A10A)

Another interviewee A3 who addresses low levels of confidence amongst faculty, differs by stating that faculty development attracts the right kind of faculty who are committed to high quality learning design. Discussing this in the following, the digital leader explains that faculty development creates an honest picture of the difficulties surrounding blended learning design. As a result, faculty are making informed decisions as to whether they wish to redesign their course for a blended mode.

> Often, it's just confidence levels. (A3)

> A lack of a clear picture of what's involved. in some cases [PD]... might put people off – that's okay because you know you want them to have a realistic understanding of what is involved in developing a course. If you want to have high quality online and blended programmes, you don't want people to kind of just (inaudible 37:02) and do it half-heartedly…… there's a lot of myths out there was well (A3).

This evidence is strong in showing that HE faculty are often limited in their pedagogical knowledge, competencies, and confidence, when it comes to learning design with technology. The data also shows that faculty development is crucial in overcoming these challenges. It improves the pedagogical knowledge and instructional design competencies of faculty, and therefore increases the potential for effective learning experiences using technology. This leads to the conclusion that there is a need for faculty to have opportunities to consider all aspects of their teaching using technology.

5.3.2 Avoiding the 'course and a half syndrome': Getting the Balance Right

Digital leaders explicitly or tacitly make a distinction between the different levels of technology usage for pedagogy on the part of faculty. Faculty, who are new to digital learning, are often using technology for pedagogy in a basic way and generally lack pedagogic knowledge regarding learning design with technology. This is understandable to digital leaders who explain that how pedagogy is enacted within virtual environments can differ from face-to-face environments. In contrast, more experienced faculty demonstrate higher levels of pedagogic expertise in their usage of technology for pedagogy. These champions of blended learning are pedagogical rather than technological experts. Based upon the interviewees' responses, an awareness of these different levels of faculty practice is important. It helps create a clear picture of the developmental needs of faculty. It also gives a deeper insight into potential challenges of learning design with technology, and/or a deeper understanding of the nature of effective technology use for pedagogy.

Several interviewees use pedagogical 'levels' or 'phases' as a yardstick of faculty use of technology for pedagogy. These digital leaders identify a sizeable proportion of faculty within their HEIs as being at a basic level of technology usage for pedagogy. Despite this issue, being aware of faculty capabilities enables these digital leaders to appropriately address faculty needs. Take for instance the next extract, in which interviewee A6 discusses her experiences as faculty developer. While her initial emphasis was on pedagogy, the digital leader explains that her focus shifted, as most faculty are at a phase one and using technology for content delivery. Knowing where faculty are at pedagogically and technologically is helping the digital leader to gradually move faculty towards higher phases of technology integration.

> [while my focus was on pedagogy] … the reality of what people could do became very apparent…. I got them sort of comfortable pedagogically with what they were doing currently... baby steps so that they can see that …putting stuff online isn't a big drama... then … phase 2, moving them from just doing audio-visual content into sort of more interactive and connecting with the students remotely… a lot of our staff are still at sort of phase 1, and then maybe 20% … phase 2… so we're definitely getting there. (A6)

Similarly, interviewee A10A who identifies three levels of technology usage for pedagogy within his HEI, contends that faculty are generally at level one whereby technology is used to deliver content. Significantly, the digital leader feels this level of practice is reflective of faculty practice more generally across HEIs. By identifying faculty level of technology usage, the digital leader's HEI can strategically focus upon identifying the supports needed from faculty to reach higher levels of technology use.

> [We have] fallen down... in terms of the nature of the adoption of e-learning by teachers across the university, and I'm sure we're not alone in that. We've identified three levels of adoption, ranging from level 1 to level 3... level 1...teacher uploading their materials onto Moodle, through to a more engaged relationship with the student using Moodle, to then … a much more interactive, not just teacher to student, but teacher to many, and many to teacher … We've achieved a certain measure of success in the first level… it's been disappointing in terms of the third level. (A10A)

> How we're going to get people working more at level 2 or 3…. [is one issue] on our agenda [strategy review], and I think it's not before time. (A10A)

While there are digital leaders who identify faculty to be at a low level of technology usage for pedagogy, this is not to say that newcomers lack pedagogical knowledge. A critical point made by several digital leaders is that the manner in which pedagogy is enacted within virtual environments can differ from face-to-face environments. Subsequently, this poses new design issues on the instructors' part. Whilst these challenges are familiar to experienced faculty, they are often unknown to faculty new to blended learning. For example, almost one third of interviewees problematise achieving congruity between virtual and face-to-face learning

experiences. Digital leaders identify this as an overarching design issue, even to the most experienced of faculty with technology. More specifically, it has the potential to reduce the efficacy of learning experiences as it can cause repetition. It is also important to note, that faculty practice is not always an issue within the HEIs of digital leaders who make this point. Some digital leaders speak more generally about the challenges experienced across HEIs arising from their vast knowledge in the area of digital learning. One such leader is participant A5. In the following extract interviewee A5 discusses the design process involved in a course aimed at leaders. The digital leader explains that achieving consistency between face-to-face face and virtual learning design is challenging, particularly in preventing repetition of face-to-face learning in a virtual environment.

> You may be getting to this, but it is very challenging to sort through what can be done online, how does that stay congruent with what you're doing with the face-t-o face base – how do you maximise the opportunity when you have people with you physically, you know, how are you capitalising on that experience and not repeating what you just did in the online portion. (A5)

Participant A18 echoes the view that harmonising face-to-face and virtual learning experiences is difficult for faculty. The digital leader also identifies repetition within the virtual portion of a course and suggests it is the primary learning constraint experienced by learners. The interviewee connects the issue to the changing nature of pedagogy in virtual settings. Reflecting on this in the following extract, he explains that learning facilitation is vital in the initial stages of virtual courses whilst, in formal face-to-face courses, complexities ensue during the latter stages. These challenges, he believes, are unknown to faculty who are new to learning design using technology.

> [A leading constraint for learners] … the instructor taught this course face-to-face early on … the blended experience becomes - we're going to do everything we did face-to -face, plus we're going to add these online

> things…Quality becomes an issue…. facilitation becomes critical [it influences the] ... results of the blended experience for students. The amount of scaffolding early on… structures and support … the first week of an online course is harder than a face-to-face … a face-to-face course, the last week is harder than the online… And if you haven't taught before, fully online, or blended, it's hard to have the experience … the story to tell the students what you're doing. (A18)

Another interviewee, A15, who addresses the arduous task of creating alignment between virtual and face-to-face learning experiences, attributes the issue to a faculty shortfall in pedagogical knowledge and design experience. From the digital leader's perspective, faculty are afflicted with what he terms a "course and a half syndrome", whereby practice centres upon content delivery rather than scaffolding learners so they may succeed in their learning.

> The teacher problem... creates the student problem. It's called the 'course and a half syndrome'. Unfortunately, most professors, most lecturers.…have not instructional design experience... no pedagogical experience… they often …just add on more content... there's no clear integration between what's taking place in the synchronous or often the classroom environment and what's taking place in the online environment… [learners] can't see the forest through the trees…the biggest challenge for us with blended learning courses is scaffolding environments for students to learn how to successfully take confidence not only with their own learning, but how to help the learning of their peers. (A15)

In a similar vein, interviewee A10B suggests that faculty within his HEIs struggle with achieving consistency between face-to-face and online portions of courses. A major repercussion of this is a shortfall in learning facilitation. As a digital leader the interviewee has the expertise to help faculty overcome such challenges.

> Many teachers feel like they are developing a lot of out of class learning materials to facilitate blended learning. But in reality, what may be happening is that the materials that are used out of class don't necessarily link very well to the materials in face-to-face sessions. The idea there would be to bridge the out of class and in class learning and make sure that when models like flipped classrooms are adopted that they're actually adopted with pedagogical underpinnings, that they're not kind of misconceived and then adopted in a way that doesn't really facilitate the learning outcomes. A10B

The central role that champions of blended learning play in informing less experienced faculty within HEIs is addressed by several digital leaders. Interviewees foreground that leaders/champions when it comes to digital learning, are pedagogical rather than technological experts. For instance, in the following extract digital leader A15 identifies champions or 'early innovators' as senior professors who are pedagogical experts. These professors are positively influencing blended learning practices across their disciplines which they identify with.

> [champions] … they aren't the techy people. These are scholars – the scholars are full professors – these are the people that shape it. It makes sense... these are academic leaders [so they] ... make a difference. …what's been wonderful for me to see... we have a lot of very senior faculty that are very passionate about leaving a legacy... … these are people that are at the end of their career and they're frustrated because they're seeing the … they want diversity, they want new people, they want people to come into their discipline and be engaged … and for them things like blended learning will help because it's going to engage people in a different way. [A15]

Another participant, A10A, similarly points out that faculty leading the 'MOOC' movement within his HEI are professors who are pedagogical experts rather than technological.

> Our MOOC work is in many cases being led by old established professors; it's not being led by sort of young ... tech savvy academics…. And I think the same is true but perhaps to a lesser extent within faculties. (A10A)

Interviewee A5 identifies the champions of blended learning within his HEI as being highly motivated pedagogically innovative individuals. Digital leader A5 explains in the next extract that these individuals offer valuable insight for faculty development.

> The early adopters of any phenomenon… tend to be very self-directed, very self-motivated, risk takers … we have of those faculty members, they're really fun to work with and they inform us... [they have] a great drive and a great vision. Part of what [online learning centre]is trying to do is to find those

> faculty members and support them in their work in order that we can learn from them and then train the rest of the geese. (A5)

Differing from this, interviewee A7 when discussing the notion of digital learning champions, argues that technological experts are often misconceived as champions of blended learning both within her HEI, and more widely across the HE sector. These individuals who disregard pedagogy are, from the digital leader's experience, reducing the credibility of digital learning.

> Sadly, most of the technology people that are the most verbal, usually have very little credibility….. these people that are front and centre… I mean when this fellow came up with the flipped and blending learning [in her HEI] where you could save millions of dollars on campus everybody is the same as me, seduced...But really at the end of the day these things do no good and they just end up eroding the credibility…it's so unfortunate and I don't believe that we're unique in this. And I go to conferences, I see the same sorts of things... It's just unfortunate …pop technology. (A7)

The data in this section illustrates that HE faculty differ in their levels of technology usage for pedagogy across HEIs. On the one hand, more experienced faculty demonstrate higher levels of pedagogic expertise in their usage of technology for pedagogy. These champions of blended learning are pedagogical rather than technological experts. On the contrary, faculty who are new to digital learning are often identified as being at a basic level when it comes to their use of technology for pedagogy whereby technology is used to deliver content. A greater number of faculty are at this level of practice in several digital leaders HEIs. Nonetheless, pedagogy is difficult to enact in virtual settings, and most faculty new to digital learning struggle with achieving congruity between face-to-face and virtual learning. This leads to the conclusion that there is a need for faculty to get the balance right between pedagogy and technology to avoid 'a course and a half syndrome' (A5). The evidence also shows that an awareness of these different levels of faculty practice is important. It helps

create a clear picture of the developmental needs of faculty. At the same time, identifying champions who are pedagogic experts, inform less experienced faculty as to the affordances and constraints concerning technology use for pedagogy. This leads to the conclusion that there is a need to recognise the levels of technology usage for pedagogy on the part of faculty.

5.3.3 Discreet or Embedded Professional Development?

Professional development interventions that are often skills focused and delivered separately and discreetly from day-to-day pedagogic practice are common across HEIs internationally. However, several digital leaders call for faculty development that is embedded into ongoing practice. On the other hand, there are interviewees who feel that while discreet professional development is beneficial to faculty, it is perhaps more effective if professional development involves an amalgam of both. Despite these variances, what is clear from digital leaders' responses, is that a skills-based technological approach to professional development alone is not effective enough. Therefore, discreet, and embedded professional development approaches need to be considered in tandem. Although approaches to professional development can vary within and across respondents' HEIs, discreet professional development training is generally common to most. Most interviewees feel that professional development is most valuable to faculty when it supports their emergent pedagogical/technological needs. Therefore, they argue it must be embedded into everyday pedagogic practice. While some digital leaders suggest that training plays a key role in developing faculty skills and knowledge, they also concede that embedded approaches are necessary.

Interviewees opposed to 'discreet' professional development interventions suggest that these approaches fail to significantly influence faculty practice or to motivate faculty to spend time developing their pedagogical abilities. For instance, in the next extract, interviewee A2 when discussing the importance of faculty development as a focal point for HEIs, expresses her opposition to training interventions. Commenting on this, she remarks that faculty are seldom trained within her HEI. They engage with faculty during the process of learning design to help them build for the future.

> [Questions concerning] how we do faculty development … are critically important... I may not have emphasised enough that we do very little 'faculty training', we actually engage them with learning design so that they are actually creating the future. That is what Carpe Diem stuff is. (A2)

Similarly, interviewee A15 is extremely critical of training interventions. This digital leader reasons that training is not valued by, or valuable to faculty, as it overlooks pedagogy, disciplinary practices, and the interrelated ongoing nature of faculty learning. Moreover, the digital leader stresses that faculty, who are highly educated dislike the concept of training as it implies that they require "remediation".

> Too many of these courses are based on skill development…there's nothing about the faculty member…their passion for the discipline… it's all about the technology... nothing about the teaching practice… [faculty learning] … is an ongoing process…not a training intervention…faculty hate going to 60-minute training sessions where somebody's at the front, and point and click and do this. They forget it, they go back to their offices and do nothing (A15).

> None of us like to feel stupid, and most faculty members have a PhD … so that the idea that they need remediation and training just doesn't go over-well with faculty. So, I understand professional development.…[but] we have to work with faculty where they are…I don't think PD works. (A15)

Another participant A12, argues that training is inappropriate owing to the ongoing nature of faculty development. Discussing this in what follows, the interviewee explains that training exhausts faculty and thereby discourages them from

attending. From the digital leaders' experience, embedded professional development is necessary to retain faculty interest and improve their abilities. For this reason, a support unit within the digital leaders' HEI offers informal on-demand support to faculty.

> It's not formal professional development intervention, it's usually just experience… We tend to do it in kind of consultative model rather than a training model. I think it's quite important in terms of their ongoing ability and interest in online teaching, in that if they throw lots of time at a course it can burn them out and then they don't want to carry on doing it … quite wisely. (A12)

Interviewee A4, is critical of training approaches to professional development that are offered within his HEI. As a digital leader who is new to his position within the HEI, the interviewee outlines in what follows, an aim to introduce a programme-level approach to professional development. This approach centres on the process of course design and will, the leader believes, shift the focus away from technology alone to include pedagogy. This will improve pedagogic practice thus learning outcomes.

> We do, [offer training to faculty] … it's still relatively early for me at [university], so I haven't yet ... completely influenced … academic development or teaching development … the first thing I would say is I am not a strong advocate of a workshop model of academic development…the approach that I bring is very focussed on programme level development…this is not about working with individual academics…[its] Helping our faculty identify those programmes [focus is on] teaching … and technology, but not focussed exclusively on technology.. the most important thing … we're able to demonstrate very tangible outcomes or deliverables from this work. (A4)

Several interviewees feel that it is perhaps more effective if professional development involves an amalgam of both discreet and embedded professional development approaches. For instance, interviewee A11 explains in the next extract that both inhouse training and support for faculty during the process of learning design is necessary.

> [PD] it's critical…. [faculty] need to be taken by the hand and shown that this is achievable, that you can do this … and once they get over that hump they will embrace it…we have an inhouse trainer, like an educational technology officer who provides programmes as required (inaudible), in addition to bringing in expertise when needed for staff development. (A11)

Another interviewee, A16, suggests that training workshops are helpful to faculty, despite being mostly skills orientated and basic. At the same time, the digital leader feels it is crucial that HEIs provide faculty with the necessary learning supports to experiment in their use of technology in their everyday pedagogical practices.

> We do run a quite large programme of face-to-face workshops and sessions, anything from flipping, to use of social media, to the like. I mean they're bog standard, most people do them, but I think they're a reasonably central part of the sort of armoury that we have. (A16)
>
> We try and promote is a culture by which they can experiment with pedagogy…a culture by which innovation can be supported… [by]learning technologists or educational developers, people who are experienced. (A16)

The data shows that a skills-based technological approach to professional development alone is insufficient. Digital leaders agree that faculty development is an ongoing process. For this reason, some digital leaders are entirely opposed to professional development interventions that are delivered separate from everyday pedagogical practices. These interviewees feel that professional development must be embedded into everyday pedagogical practices. Several other interviewees who consider discreet professional development interventions as somewhat beneficial to faculty suggest that it is perhaps more effective if professional development involves an amalgam of both. This evidence leads to the conclusion that discreet and professional development need to be considered in tandem. The evidence also endorses yet again the argument advanced earlier, that technology and pedagogy need to be considered together and not as separate entities.

5.3.4 Key Pedagogic Elements that Faculty need to Learn when using Technology

HE learners have different needs when it comes to learning with technology. However, a key issue arising from the experiences and perspectives of the digital leaders in this research, is an inability amongst undergraduate learners to self-direct their learning. This is noteworthy as there can be a need for learners to take greater responsibility for their learning in tertiary education (Wingate, 2007). If learners are to be successful in their learning, their specific needs must be met through faculty usage of technology for pedagogy. Since digital leaders share a view that the pedagogic elements faculty need when using technology involve the notion of scaffolded learning, there is a need for faculty to adopt the role of learning facilitator. While interviewees concede that learners' needs vary within HEIs, most draw attention to a chasm between the learning abilities of undergraduate and postgraduate learners. Undergraduate learners are enormously challenged with self-directing their own learning. There is a general consensus amongst digital leaders that faculty must use technology to create a balance of autonomy for learners and intervention/support on the part of faculty. A further point made by a small number of interviewees is that there can be an erroneous assumption amongst some faculty that learners are accomplished at self-directing their learning and do not require learning support. Some faculty who are disconnected with the learner's needs can take a directed approach in their use of technology. Therefore, for faculty to diversify their practices to support learners who struggle, they must first recognise that youth is not conferred with natural knowledge and experience of learning with technology.

Most interviewees acknowledge that digital learning is more appropriate for postgraduate learners. These learners have the ability to manage and self-direct their learning and therefore require less learning support in a virtual environment. From the

experiences of digital leaders, technology mediated learning is quite often self-directed. By comparison to postgraduates, undergraduate learners are regularly challenged with taking responsibility for their learning, and therefore must be closely scaffolded by faculty to successfully learn and to develop these competencies. For instance, interviewee A17 suggests that while learners use virtual technology ubiquitously, they must be supported in directing their learning, and in learning with and from others.

> [The] Culture of being online is becoming so much more normal and natural that some of the barriers … 10 years ago are less felt now …. [issues relating to virtual learning] that's a cultural phase which we're significantly through … at least in developed contexts [however]… support to students in how to manage learning online is really helpful…learning to use each other as resources... people should be helped with that. (A17)

Participant A11 reiterates a view that despite virtual technologies being a natural part of learners learning cultures, learners lack an ability to learn with technology and must be supported by faculty in their transition into HE.

> [The HEI provides support to learners] Transitioning to Higher Education [with] ... induction elements that they would need… support modules rather than specific programme modules at the moment. …I'm not convinced that despite the digital age student, that they have the wherewithal to engage in undergraduate level … e-learning. (A11).

Discussing the differences between the learning capabilities of postgraduate and undergraduate learning, digital leader A3 emphasises that learners transitioning into HE require a great deal more support than postgraduate learners who have the learning abilities and skillsets to succeed.

> Postgraduates … [tend to] know how to study, how to write an academic essay… learner support thing isn't so big... if this is somebody's first experience of higher education that's online, they're going to need lots of support (A3)

Some digital leaders who acknowledge undergraduate learners' challenges with managing their learning, argue that entirely remote digital learning experiences are too challenging for this learner demographic. This point is made by participant A1, who explains it is mostly postgraduates who enrol in MOOCs as undergraduates lack knowledge and confidence in learning autonomously.

> MOOCs … 70 or 80% of those are actually graduates that take those … it may mean that we need a certain amount of confidence…a certain amount of knowledge before we can engage in that kind of learning… [given this] it may well be that undergraduate would be more complex. (A1)

Another interviewee A11 also addresses the challenge of remote learning for undergraduates. To illustrate this, the digital leader discusses how it can be mandatory in certain HEIs for online course applicants to hold an undergraduate degree. This helps ensure that learners learning abilities are sufficiently mature.

> [blended learning] it is more suitable for the postgraduate student… [discussing a friend who completed on online course] …if he didn't have a full degree, he actually wouldn't be able to take the online course… that's recognised… that the online space is more suited to a postgraduate than it is to undergraduate. (A11)

In a similar vein interviewee A15 attributes undergraduate learners lack of self-direction to transmission based instructional models used in their post-primary institutions. The digital leader maintains that meaningful learning design on the part of faculty can help overcome this issue. Discussing this in the next extract, the participant explains that careful learning design, whereby faculty give learners a correct balance between autonomy and learning support/intervention and autonomy, builds learners learning confidence online.

> Students in high school are really conditioned to taking tests... it's a very transmission focus of delivery … [when they become] undergraduates…they get frustrated... now they have to learn to think for themselves…the benefit of blended learning – it's a good mix of sort of maybe sometimes face to face or

> classroom support, but also gaining some confidence in the online environment... there's a huge difference in the undergrad and the graduate… hopefully by the time a graduate student's... they're engaged, they're motivated … ..much more willing to be autonomous, to be self-reliant, self-directed, and learn in this environment…that is the bonus for blended learning, especially in first year undergraduate courses – it creates conditions and it creates the environment for students to learn how to take responsibility for their own learning…[however] it's got to be well designed. (A15)

In a similar vein, interviewee A18 argues that successful learning experiences with technology are dependent upon faculty assuming the role of a learning facilitator. Discussing this in the following, the digital leader contends that faculty must move away from directing learning and instead scaffold learners in their use of technology for learning. The digital leader identifies a need for HE faculty to develop their abilities to scaffold learners through professional development and argues that the concept of scaffolding can be considered through all learning standpoints. This extract is representative of other digital leaders' perspectives on the role of faculty when it comes to their use of technology for pedagogy.

> Anyone who teaches should get a course in scaffolded learning…You can talk about it from [different learning standpoints] …. It is basically the notion that we assist in learning…. just the way we assist is changing…Teachers are concierges, they're curators – we find the best stuff and make them available…the curator model is one that I subscribe to… I've been talking about moving away from a course credit manager, camp commander ... to being a counsellor, a consultant, a curator, a concierge … a cultivator of learning. And so, the model of what a teacher is changing. (A18)

While digital leaders agree that the instructors' role is that of facilitator or 'guide on the side', a small number of interviewees suggest that faculty can be disconnected with learners' needs and are thereby reluctant to move away from a directed approach in their use of technology. This is oftentimes connected to an erroneous assumption that learners are accomplished at self-directing their learning and do not require learning support. Take for example, participant A7, who stresses in

the next data extract that learners learning abilities are often overestimated by instructors/lecturers. The interviewee stresses that this presumption often leads to poor evaluations of teaching by learners dissatisfied with their learning experience.

> Mainly, professors assume the students are digitally literate and will know exactly what to do and they don't need any support. I think we both know this is simply not the case…. it's the school of hard knocks, in that professors get their evaluations back and the students have absolutely nailed them to the wall, the technology aspects of it. (A7)

Similarly, interviewee A16 argues that academics can be disconnected with learners' needs and explains that many consider the role of learners as being passive recipients of information. From the perspective of this digital leader faculty can oftentimes be fearful of embracing the role of facilitator.

> I think more broadly… there is a belief by many academics that students are empty vessels into which it is our job to pour all this knowledge … and learning is a knowledge transfer process one way, and then a knowledge repetition process back the other way. Modern pedagogy around e-learning doesn't do that – it's a much more engaged collaborative process where students you know learn not just from academics but from each other, from networks outside the institution, they learn from practice, they learn from work, they learn from application… a whole variety of different ways. And the role of the teacher changes from knowledge transfer to facilitation – and that can be a bit scary. (A16)

Interviewee A5 believes that HE administrators and wider society are those who can take for granted that learners are accomplished at learning virtually. Addressing this universal issue in the next extract, the leader links the assumption to inadequate learning support across HEIs for learners. Describing his daughters learning experience of an online course, the digital leader proposes that learners are deficient in what he terms the "executive skills" needed to learn with technology.

> [there is] a misperception ... amongst big society or certainly among administrators..… [that learners know how to learn with technology] .... the story of my daughter … taking an online course. [while teacher is excellent,

> she comments] ... 'Oh dad, he's horrible' …makes us do all the teaching … not even show up.' … it dawned on me … she was not prepared … to take responsibility… that self-directedness, … self-management… 'executive skills' … she's not alone … in knowing how to act and think… the biggest impediment right now is we don't adequately prepare our learners for success in online learning. (A5)

Some faculty are unwilling to assume the role of a facilitator in the usage of technology for pedagogy as they have mastered the role of directing learning. Commenting on this in what follows, participant A7 remarks that while faculty teach extremely effectively face-to-face using a directed teaching approach, this often fails to translate in virtual environments.

> 15, 20 years ago, the biggest difficulty was the technology itself – that is not an issue at all anymore …. The issue really revolves around teaching presence and how that's facilitated [among the issues is] your very charismatic professor who gives lectures, and the students are absolutely rivetted to their seats because of the dynamic personality of these people. … those ones fall flat because their personality simply doesn't come across. (A7)

Participant A9 likewise suggests that some academics prefer to direct practice. Discussing this in the next extract, the digital leader explains that his job is changing this perception so that faculty will integrate technology in more pedagogically meaningful ways than promote learning.

> Some people prefer an approach that's maybe more direct. And it's about trying to say if I'm promoting technology … and I don't want to promote technology for its own sake … it's about trying to see how it would enhance the learning experience. (A9)

Differing from this, a minority of interviewees connect a faculty preference to direct rather than facilitate learning with their disciplinary field. For instance, interviewee A18 who discusses the openness of disciplines to gathering formative feedback from students, comments that faculty within certain disciplines such as the physical sciences find it difficult to move away from a directed model of learning.

> [formative feedback is traditional within some disciplines] … sometimes you have experts in the hard Sciences – to give up that notion of being an expert to let students give you feedback on what you should change, it might be hard for them to give up that expert model. (A18)

Similar to this, digital leader A4 comments:

> Some disciplines lean much more to interaction with content, the way in which they then embrace the new technology is going to be far more focussed on the content interaction. (A4)

The evidence shows that the pedagogic elements faculty need to know when using technology, involves the notion of scaffolded learning. HE learners have diverse needs when it comes to learning with technology. A key issue, according to digital leaders, is the inability amongst undergraduate learners to self-direct their learning. To appropriately support learners and help overcome this issue, faculty must use technology in a way that provides learners with a balance of autonomy and support/intervention from faculty. Therefore, there is a need for faculty to adopt the role of learning facilitator. The data also shows that there can be an erroneous assumption that undergraduate learners are accomplished at self-directing their learning and do not require learning support. Some faculty who are disconnected with the learners' needs can take a directed approach in their use of technology. Therefore, if faculty are to diversify their practices to support learners who struggle, there is a need for faculty to first recognise that youth is not conferred with natural knowledge and experience of learning with technology.

5.3.5 Empowering Faculty for Pedagogic Innovation with Technology through Community

The evidence shows that most faculty development occurs through formal or informal faculty-steered collaborations involving the HE community.

A significant amount of faculty learning arises through community type activities and approaches. While community collaborations can vary both in nature and in focus, the universal focus is on improving pedagogy. Since interviewees share a view that community plays a key role in innovative faculty usage of technology for pedagogy, there is a need for HEIs to focus upon nurturing community approaches to professional development. Nearly all digital leaders concede that community plays an instrumental role in building faculty knowledge and improving their pedagogic practices. However, their responses differ as to the nature of community interactions, which range from partnerships, to collaborations, to hybrid models involving a mixture of approaches. The varied nature of these faculty-led approaches is significant as it suggests that faculty vary in their needs when it comes to their pedagogical development. This point is encapsuled by digital leader A12 who in the next extract explains that while faculty are encouraged to connect the wider academic community for development support when developing digital learning courses, who they consult with and whether they seek support is steered by their individual preferences.

> Sometimes they talk to us about it, sometimes they talk to their peers about it, sometimes they don't talk to anyone about it, sometimes they don't think about it. Where we work with people, we're encouraging them to think in that kind of way in order to accelerate that professional development process. (A12)

A widely held belief amongst participants is that blended learning must be a partnership between faculty and different members of the HE community. From many

digital leaders' perspectives and/or experiences, learning technologists play a vital role in supporting the emerging learning design needs of faculty in their day-to-day practices. For example, interviewee A16 indicates in the following that the partnership between faculty and educational developers/learning technologists within his HEI provides faculty with the appropriate support to be more experimental in their pedagogical practices.

> We have...a group of experienced ed developers, including myself, who are experienced academics…learning technologists…so that meld of academic and technological practice … and we bring those people to bear to say look you know you're not just experimenting by yourself, you've got a safety net with which to experiment. (A16)

Another interviewee A15 who similarly views learning redesign as a partnership between faculty, and teaching and learning centres, adds that faculty partnerships must also spread across the wider HE community such as with student services, libraries, IT, or registrars.

> [Faculty development is about meaningful learning redesign which is] ... someone working with the faculty member … key to blended learning, it's got to be a partnership, it's got to be a partnership between the faculty member if there's a centre for teaching and learning, if there's an IT department, if there's library, if there's the registrar, if there's student services. (A15)

Differing from most other interviewees, participant A10A describes a 'hybrid model' of support adopted by his HEI. The interviewee explains that eLearning officers are positioned within each faculty to support staff. These officers also liaise with a central eLearning/pedagogy support unit and an IT department.

> [University model is] … a hybrid model... [involves] the establishment of a small e-learning and pedagogical support unit consisting of about 5 or 6 staff members…distributed faculty engagement through IT information [and] e-learning officers within each of the faculties... Faculties have an e-learning officer, and so they work with us and Information Technology services to provide this overarching model of support for e-learning within the University. (A10A)

Faculty peer collaborations are, from the viewpoint of several interviewees, integral to improving faculty usage of technology for pedagogy. Peer collaborations can be formal or informal and take place within and beyond HEIs physically or virtually. A key point made by interviewees is that faculty peer collaborations privilege pedagogy over technology. In the next extract, interviewee A18 argues that knowledge sharing within faculty is imperative if faculty are to overcome pedagogic challenges specific to virtual environments such as identifying high quality resources or facilitating learning.

> [If resources are poor at the outset] students might discount the rest ... if you are [new to BL] …. there's a lot of structures that have to be built in, ... advices that you build in… [another issue is] a resource pool that's expansive… it's hard to know what the quality is…often we work alone in silos… if it's blended you should share with others in your department what you're doing and get their advice…become more collaborative... a unity. (A18)

Interviewee A8 also acknowledges the potential of faculty peer communities for faculty development in the next extract, highlighting that knowledge exchange through communities can occur internationally through the use of virtual technologies.

> [learning with technology is] engaging too with the broader community, because a lot of the whole thing is about exchanging ideas… that you can talk to the experts in Australia ... in the States or … exchange ideas in forums or directly …it's about the affordances and the possibilities of technology for teaching… [formally or informally]. (A8)

Along similar lines, participant A6 comments in the following, that faculty are learning in a community of practice that formed naturally in response to YouTube clips developed by the learning support unit.

> One single breakthrough moment [providing] a dedicated 'just in time' training YouTube channel for staff [for Moodle queries] … [whereby] a 'screen grab' video of the resolution [is created and posted] …this then created a community of practice and a sustainable learning environment… lecturers learned from

> each other's queries… help each other out...share what they had learned. (A6 follow up)

Other digital leaders indicate that in practice faculty within their HEIs are informally interacting and collaborating with their colleagues to further their knowledge of digital learning design. For instance, interviewee A9, who discusses findings of a recent staff survey, emphasises that faculty are learning by connecting with their colleagues often in lieu of formal training that is institutionally provided.

> The feedback from comments from staff in the staff survey recently around the use of technology was that quite often other than training, quite often it was a colleague … support and help of a colleague that would help them use something new. (A9)

In like manner, interviewee A8 maintains that informal faculty discourse is the greatest influencer when it comes to learning with technology.

> Quite often … it's the Maths lecturer who suddenly sees what his colleague does, and the discussion over coffee – that's where the kind of real kind of things happen. (A8)

Differing from this, almost one third of interviewees argue that formal faculty peer collaborations are more beneficial to faculty than professional development training interventions. For this reason, teaching and learning centres within some of these digital leaders HEIs are creating formal opportunities for faculty to collaborate. For instance, interviewee A16 notes that while training is on offer to faculty, the unit responsible for digital learning innovation is in the initial stages of developing activities that support faculty peer collaboration which he believes are more effective. One approach involves gaining the perspectives of digital learning champions and the sharing of these views with other faculty.

> It is very easy for a central unit to put out training, it's much more beneficial for the people who are doing it to tell other people about it. So, we're starting to do that in small steps by sort of celebrating innovators, interviewing them, getting their kind of perspectives on the way they did particular innovations and then sharing that as widely as possible. (A16)

Participant A3 who discusses the power of faculty collaborations, explains that sessions are organised by their learning development centre to facilitate knowledge sharing amongst academics. The interviewee explains that faculty experienced in digital course development, exchange knowledge with those new to learning design.

> Whenever we try to talking to other departments… it makes it much more real if we can point to examples… the good thing is that we have sessions … so for example the School of Humanities recently was going to develop a blended programme, and we just organised a lunch time session where some of the people who'd already produced blended programmes came in and spoke and answered any of the questions. (A3)

Participant A4 differs by suggesting that faculty development must be a collaborative process of program redesign for digital learning. Commenting on this in the following, the digital leader remarks a community of academics is focused upon improving pedagogy and can identify the key learning issues in need of attention.

> Programme level development…. demand-led … brings…a whole group of academics round the table to talk about their teaching … [most importantly they can] … demonstrate very tangible outcomes…If we've identified programmes where the first year clearly has some challenges in relation to student retention, or [through student surveys] … issues with assessment…. we can address those. (A4)

The relationship between faculty development and community research into learning and teaching with technology is addressed by approximately one third of interviewees. Perhaps the most comprehensive response is made by interviewee A15, who is strong in a belief that faculty development must be a community research activity rather than a training intervention. The digital leader explains that learning design and faculty development must be a research focus as they are both ongoing.

> Course redesign, learning about blended learning, designing classes, is an ongoing process – you don't get it right the first time. (A15)
>
> Faculty are professionals, they work…by integrating their research, their service, and their teaching practice … I understand professional development, but I'd like to really focus more on the scholarship of teaching and research. (A5)

Noting the important nexus between faculty development and community research digital leader A15 also proposes that a 'Community of Inquiry' (CoI) model is an effective research model for faculty development. Discussing this in the next extract, the digital leader explains that a 'CoI' allows faculty to collaborate in learning communities, along with developers and experts, and to conduct research into the process of learning and teaching design.

> Where I've really seen it change … it's faculty learning communities… the 'Community of Inquiry'… an ongoing process, [rather than training] ... a research based activity... get a group of faculty together… [including] developers... research experts….to talk about redesigning our course… look at where are the learning … the student learning issues … examine them and research them and see if the actual student learning environment, their conceptual understanding, improves because of blended learning… a research focus, because that's what faculty love (A15)

This digital leader (A15) also notes the influences of Etienne Wenger's 'Communities of Practice' framework, and Bill Cox's 'faculty communities' upon the 'CoI' model and suggests that the model represents a return to the historic identity of university in which academics worked in communities.

> [CoI is influenced by] Etienne Wenger … the community of practice... the power of storytelling, sharing our shared experience with each other…Bill Cox … work on faculty learning communities… [influenced] ... the Community of Inquiry..[created by]Randy Garrison …it really is about enquiry… curiosity driven learning, the idea of you know making connections where we are…but for me this is wonderful because [returns to the idea of] … the Oxford and Cambridge traditions .. about a community of scholars getting together – that's why our universities were created... And just like community of practice, they wanted to enculturate new people into their community, new people into the community of scholars. (A15)

In a similar vein, interviewee A14 expresses that research conducted by a 'community of practice' within his HEI, positively informs their strategy concerning teaching and learning with technology.

> There is a practitioner [community of practice] … most of the innovative activity and most of the interesting things that appear in our strategy are the result of projects through the [name of community] initiative. (A14)

This digital leader also stresses that they strive to strengthen the connection between research and faculty development by maximising opportunities for faculty to publish research into their practices or by offering incentives to digital learning research experts to engage more in pedagogic practice.

> We also see great value in what we call 'the research teaching nexus'... we're trying to look at...the research community to have a positive impact on what's happening for our learning and teaching... opportunities for publishing content, open educational resources are embedded in research practice…[also] looking at promotional opportunities for people from a research background, that they've engaged with digital learning as part of their research activity. (A14)

Differing from other digital leaders, interviewee A9 addresses the merits of faculty development through research communities across HEIs. In the following, the interviewee discusses how seed funding of projects from a [national research organisation], facilitated research collaborations into teaching and learning with technology. This led to the sharing of research, resources, and experiences, through a national repository.

> For me the [organisation name] was great in terms of providing seed funding for small projects [nationally] … people could work on…. projects, develop their skills in using different technologies… those projects got increased visibility both locally and nationally [due to their funding] …. It was I think immensely beneficial to the academics involved, and I know it's beneficial for me because I worked with my counterparts in a number of universities and colleges. (A9).

Another respondent A5 indicates that his HEI supports and promotes innovative change through a variety of activities and strategies that are facilitated through collaborations with industry. Describing one such initiative in the next extract, the digital leader outlines that different HE stakeholders are encouraged to apply machine learning and AI to the challenges within HEIs. Such activities are supported through internal incentive funds and partnerships with enterprise beyond the HEI.

> There are many activities/strategies at [university name] ... designed to encourage and support innovation. One of the more creative approaches has been to create a "challenge" open to students, faculty, and staff around the application of artificial intelligence and machine learning to problems in higher education. Through incentive funding from within and partnering with external industry leaders, the [name of challenge] seeks to stimulate the generation of ideas and ultimately minimally viable products towards the problems. (A5 follow-up)

The data illustrates that a significant amount of faculty learning arises through community-based activities and approaches. While community collaborations are varied both in nature and in focus, all privilege pedagogy when it comes to technology supported practices. Partnerships between faculty and learning technologists are important in supporting faculty needs. On the other hand, faculty are learning through peer collaborations that can involve simple knowledge exchange, learning design, or research into teaching and learning practice. The evidence supports the conclusion that there is a need for HEIs to focus upon nurturing community type approaches to professional development.

5.3.6 Support Strategies and Enabling Structures at Institutional Level

The data, presented below, identifies a need for a support strategy for faculty learning with technology, to address constraints to their learning development. It also asserts that the pedagogic possibilities of faculty practice are reliant upon adequate government funding to HEIs and investment in the leadership role within HEIs.

A number of challenges are experienced by faculty which can influence their ability or motivation to focus upon learning development and design with technology. Faculty are constrained by insufficient time or a lack of incentives to prioritise their pedagogy practices. In their discourse surrounding the role of digital learning strategy, digital leaders identify a need for a learning 'support strategy' that pays close attention to the needs of faculty. This they believe will help achieve a better fit between theory and practice, and policy and practice. However, there are further issues addressed by interviewees that that play a pivotal role in shaping institutional responses to matters relating to learning with technology. Nearly all interviewees agree that technology should not be viewed as a panacea around efficiency matters - where it is used to simply disseminate the old content more efficiently. To ensure the quality of digital learning, there must be appropriate financial support for digital learning. Several digital leaders indicate that insufficient government funding to HEIs, and an interrelated accountability culture, can impact upon faculty practices in HE. It would seem that the pedagogic possibilities of faculties' practices hinge upon adequate government funding to HEIs. A further point made by interviewees is that leaders can lack knowledge and/or appropriate support when it comes digital learning. This is noteworthy as the values and practices of those in leadership roles steer the practices

and priorities of faculty. Therefore, the pedagogic possibilities of faculty practice are also reliant upon investment into the leadership role within HEIs.

One of the leading challenges experienced by faculty, and addressed by most interviewees, is insufficient time to spend upon developing their technologically supported pedagogic practices. The following are typical responses. Interviewee A1 lists the issue of time, whilst interviewee A4 notes the heavy workload of faculty.

> The challenges or constraints that [faculty] face in their day-to-day work… one of those real issues and challenges right now is workload. (A4)
>
> Time and confidence, I think really are recurring themes (A1)

Several interviewees who also identify time as a key challenge for faculty across HEIs, explain that additional time is offered within their HEI as an incentive to faculty to enable them to focus upon digital learning. As an example, in the following interviewee A2 comments that her HEI provides faculty with the requisite time as learning design with technology is time consuming. The HEI also offers appropriate learning developmental supports. The digital leader feels that time is a more appropriate incentives than offering faculty extrinsic monetary motivators that is often the case within other HEIs.

> I don't think that any faculty should be enticed to teach better through paying them incentives, and we don't do that here, although I know others do. What we do need to do for is compensate the time…. you need to make sure they're given appropriate time, to understand that learning design takes time. So, we don't offer a great deal of extrinsic motivators simply because I don't believe in them. But what we do, is offer a huge amount of development support. (A2)

Similar to this, digital leader A11 explains in the next extract that his HEI allows faculty extra delivery time for technologically supported learning. The decision was taken as time for learning design was a leading issue experienced by faculty in other HEIs.

> [time] it was an issue in other institutes …we apply the model well if we're allocating three hours for delivery… if you can deliver in less, you're still getting the three hours, and that's incentive to maybe get people engaged. (A11)

One digital leader (A16) whilst identifying time as a ubiquitous issue for all individuals working within HEIs, differs from other leaders by suggesting that insufficient time can be used by faculty as an excuse to justify their unwillingness to spend time upon learning and teaching with technology. The interviewee explains this in the following.

> My research area is around resistance to change driven by technology in higher education institutions. [one of three resistance factors are] …the ubiquitous time pressure. I don't buy that as much as … We're all pressed for time… … the critical issue ...they're just not willing to allocate the time to things around teaching and learning. (A16)

Digital learning support strategy for faculty.

When questioned about digital learning strategy, interviewees maintain there is a need for a digital learning 'support strategy' for learning with technology. Although interviewees feel a support strategy must be informed by different stakeholders, in their responses most leaders identify a need for strategy to pay close attention to the requirements of faculty. Digital learning strategy is considered to be outdated and inappropriate by many interviewees who feel it privileges technology over learning, when technology is already a resource embedded into HE learning cultures. For this reason, strategy relating to learning with technology is often integrated into interviewees HEIs overarching learning and teaching strategy. Other digital leaders who do not address the notion of 'digital strategy', foreground a need for a learning support strategy when it comes to strategy. In the following data extract, interviewee A9 indicates they are past a time when there was a need for a digital

learning strategy as technologies are a natural part of the landscape. Instead, policy relating to technology is integrated into learning and teaching strategy.

> We have a learning technology policy which was adopted by academic council. It's about 7 or 8 years old at this stage... [made sure] on making sure the infrastructure was available… things have moved on since ….. we have a teaching and learning policy, and e-learning should fall into that naturally. (A9)

Similarly, participant A3 indicates that eLearning strategy is embedded into their learning strategy, and comments in the next extract that this prioritises learning and ensures that faculty do not perceive digital learning as a new approach to learning.

> Rather than writing an e-learning strategy, we will just have a learning strategy…aspects of e-learning and technologies are factored into that... we can emphasise the point that the most important thing is teaching and learning, and with lots of different ways of doing it … what we are interested overall in our centre is trying to change and enhance practice in teaching and learning across the institution. (A3)

Another interviewee A8 argues in the next extract that there is a need for a support strategy for eLearning rather than an eLearning strategy.

> I've always… shied away from [when people say] … we need an e-learning strategy…I don't think we need an e-learning strategy, from my perspective we need an e-learning support strategy … I think putting a universal eLearning strategy for (college name) in place…it is a bit like, dare I say, putting a universal learning and teaching assessment strategy. (A8)

Nearly all interviewees identify a need for a support strategy relating to learning with technology that pays particular attention to faculty needs. A recurrent focus is identifying the supports which faculty require to enable them to integrate technology in a more pedagogically innovative way. Take for instance the next extract in which digital leader A1 comments that evidence of successful strategy is faculty feeling that they are supported in learning development, along with faculty effecting more meaningful learning experiences with technology.

> [current strategy] is a bit too effuse… my job over the next number of months… see if it's fit for purpose[strategy]…. evidence of success where I see a step change in staff engaging in e-learning ….. not just Blackboard presence or absence…. the extent to which people are using some of the extra features in it [to facilitate interaction] …also staff having the confidence to feel that they will now grow. (A1)

Another interviewee A9 who identifies a need for a learning support strategy rather than a digital strategy, reasons that strategy must centre upon identifying the needs of faculty new to digital learning.

> We have debated whether we need an e-learning policy per se, and we definitely need kind of policy or procedures around things like if somebody's teaching online for the first time how do we support that and what requirements, training requirements, must they do. (A9)

In the same vein, interviewees A13 and A11 identify a need for a learning support strategy that offers non-monetary incentives to faculty to enable them to prioritise pedagogy.

> We are working on one (strategy) that we hope will be more effective….and which would include … some sort of incentivisation (non-monetary supports to enable faculty to develop their practice). (A13)

> I think we would have to engage heavily with staff and put a proper framework in place to make sure that they understand that if you're engaged with online, you know there are some incentives (non-monetary supports for faculty). (A11)

It is conceded by the majority of digital leaders that digital learning support strategy must engage with different HE stakeholders and not just faculty. This will provide a better fit between policy and practice, and theory and practice. For instance, interviewee A15 argues in the following that HEIs must strive for a 'learning' centred rather than a 'learner' centred environment. This ensures that all stakeholders learning needs are fulfilled and that there is trust between leaders and faculty that the focus will be on learning. The digital leader explains that this was achieved previously through

a ‘roundtable’ approach to strategic development within his HEIs. This approach is no longer taken due to a significant lack of funding that has shifted senior administrations focus upon cost reduction.

> A learning centred environment… everybody is learning – the students, the faculty, and the administration... never believe it when they say, ‘student centred learning’ (A15)
>
> Initially….it was really a meeting of the minds, grassroots… [was prominent in US] it’s called the ‘Teaching Learning Technology Roundtable’... an environment [including] undergraduate... graduate student reps... support staff... different faculty... chaired by... the vice president academic... it was meaningful because these were rich engaging discussions... the focus was first on the teaching and learning, and then how the technology would support it ... the focus was on improving not just the learning environment but the teaching environment (A15)

Differing from this, other digital leaders HEIs have achieved a greater level of success when it comes to the inclusion of different stakeholders’ voices in the process of strategic development. For instance, digital leader A17 comments:

> Oh yes…absolutely [strategy is informed by all HE stakeholders] … and argued over! … (laughs). (A17)

Another interviewee A16 discusses consultative and engagement models which they are developing. In the next extract, the digital leader explains that these models centre upon engaging different HE stakeholders through informal events. This approach is being taken to prevent certain stakeholders from being overlooked which is a common issue with strategy development.

> The strategy we’re taking forward has a model of consultation and a model of engagement [an adapted approach of another leading HEI] …often these consultations either merge into ...all in a room… or sit on a governance committee. [focusing on] different methods by which that engagement can occur, whether ... in terms of hacks... informal events... conversations, debates … everyone has an opportunity to be engaged at different levels. (A16)

Within interviewees A5 HEI all stakeholders are consulted when it comes to strategy relating to learning with technology. However, the interviewee highlights that including the learner voice is problematic since student turnover is high.

> Absolutely [all stakeholders are involved in strategy development]. ... 'Yes, except …' The one group that we don't do a great job of in my opinion are the students…. We have not quite figured out how to get that voice around the table in a more active … because they turn over all the time. (A5)

Like interviewee A15, a minority of interviewees indicate that faculty are completely removed from strategy development relating to learning with technology. For instance, within the HEI of interviewee A7 the strategy is a 'white paper' document created by senior administration to meet with governments' demands.

> We have … the last 20 years …. a white paper strategy document on e-learning. It's always from the top down, and it's their way of dealing with the e-learning strategy for the institutional (inaudible 28:38), and it has to be submitted to the government…. It has no impact, in fact…if you asked [about] the eLearning strategy plan…[faculty] they would say a what? (A7)

Another interviewee A8 indicates that eLearning is a component of learning and teaching strategy. However, as strategy is universal in nature faculty feel it is not relevant to them.

> We have e-learning as part of [a universal learning and teaching strategy] ... if I were to go down to the lecturer in (campus name and say) 'What do you think of the learning and teaching assessment strategy?' they will say 'Huh?.... they say well you know that's got nothing to do with me, that's just institutional stuff..…. one size doesn't fit all, I think. (A8).

Leadership and government funding influence institutional responses to digital learning.

An effectively implemented learning support strategy for digital learning may be helpful in addressing the requirements of faculty. However, there are other factors the interviewees discuss that must be considered in the context of how institutions respond in matters relating to learning with technology. Digital leaders feel that technology must not be viewed as a panacea around efficiency matters - where it used to simply disseminate the old content more efficiently. Digital learning must be appropriately invested in financially to ensure that learning experiences are of a high quality. Whilst difficult to measure, most digital leaders feel that the costs associated with digital learning are similar to, or exceed, the cost of face-to face-learning. Only one participant suggests it costs less. Responses suggest that digital learning shifts how money is utilised by HEIs. There can be a need for upfront finance, as well as ongoing investments to support dynamic technological and pedagogical needs. Despite this need, several digital leaders connect faculty challenges to the existential issue of insufficient government funding to HEIs and an interrelated accountability culture. This suggests that the pedagogic possibilities of faculty practices not only depend upon internal institutional supports, but also hinge upon adequate government funding to HEIs. The next response is typical of several interviewees. Digital leader A4 states he is not steered by costs or cost-reduction as it is quality learning that matters and is what should be a steering decision relating to technology mediated learning. Therefore, he explains that learning in virtual settings is financed in the same way as face-to-face learning. Even so, it may be possible to make savings on technology by using free software, which is a point made by several interviewees.

> [Cost of digital versus face-to-face learning] I'm less concerned about costs first and foremost, I'm more concerned about quality. That's really what should be driving our decision making, but I also point out that very few universities have been able to adequately or accurately cost what face to face teaching involves…We should not hold online or blended learning to a standard that we're not expecting of face-to-face teaching. So, I work on the

> basis that the costs are the same…I'm not particularly driven by cost, I'm certainly not driven by saving money, [while there is the potential to save money through OERs] ... quality teaching costs, and we should be willing to pay for the cost of quality. (A4).

Interviewee A17 similarly states that his HEI is concerned with the quality rather than reducing costs through blended learning. However, differing from interviewee A4 this digital leader emphasises that they are experiencing an increase in costs arising from the provision of additional facilities to support learning online.

> Well, any original ideas that online teaching is going to reduce costs I think have not … that's not been part of the outcome, so no there's no overall cost reduction. And we've been through a very significant phase in a blended offer of increasing costs because of course you're adding facilities and not taking any out really. And I think the extent to which we're able to exit from the face-to-face element of teaching we're still in the middle of, so I don't think we've experienced any cost reduction for sure, I think we're probably still under cost increase. So, we hope and believe that we've increased the quality of our teaching and learning but not reduced the cost. (A17).

Many interviewees when discussing costs and digital learning point to a need for upfront and ongoing investment. Digital leaders discuss a requirement for technological investment and revision, and/or the importance of continuous technological and pedagogical support. For instance, in the next data extract participant A3 comments that digital course design requires upfront and ongoing investment to ensure learners are sufficiently supported.

> I guess in practice … they're expensive because you are kind of having to produce the materials up front, so there's a cost, an initial cost. And then in terms of sustainability, you need to make sure you have adequate support for the learners. (A3)

Interviewee A9 similarly indicates that digital learning demands appropriate infrastructure, ongoing support from IT, and eLearning and pedagogical support. This

digital leader is also strong in a view that blended learning will not reduce institutional costs or generate a large income stream for HEIs.

> Can management think (inaudible 31:53) going to put people online, my (inaudible) it's not, it's just different and there's different costs associated with it……I suppose they're different but there are still substantial costs, and it's not going to be a panacea – a lot cheaper, big income stream for colleges if they implement online learning. So, if you do it properly you would have costs associated with … in general we'd have the technical infrastructure, you'd have … like we have good IT support for what we do currently, if we extended it online, we probably would need more of that. And we do have the pedagogical support, the e-learning support, so it's a matter of trying to figure out how best to support the different elements. (A9)

Similar to this, digital leader A14 indicates that it is expensive to properly support faculty through the provision of ongoing support from the learning and teaching centre.

> We're a central department of 8 people and we provide a service for the entire institution. So, in terms of curriculum design it would be really nice to follow (?26:43) parts of our team out in each of the faculties – and that's going to be expensive. So, it's certainly not a cheap way of doing things. (A14)

Another participant, A2, discusses technological costs. In the following she explains that there is a need for both a need for upfront investment, as well as ongoing for technology revision. Like other digital leaders, the interviewee highlights, that rather than reducing costs, digital learning changes how institutions use money. Upfront finance is required that can be used throughout the duration of a course.

> The costs are associated with the change process, and with the revision of the technology…..we invest $1 million a year in our learning management system, and therefore we want to get the very best out of that.……the major difference is what I've been alluding to before in terms of costs, that many universities' budgets are based on an annual process, whereas when you're designing using technology for learning in you need upfront money … even if then that's moved out over several years that you're delivering that course. So, it really is changing the way money is used, and it is …, very difficult to compare like with like. (A2)

When asked to compare to costs of face-to-face learning and virtually supported, interviewee A5 also comments that initial investment costs are remarkably high. However, the leader notes that costs can be recouped over a number of years as resources can be reused. Even so, the leader points out that there is a need to make changes and improving learning design on an ongoing basis. The digital leader also feels it is difficult to compare cost of face-to-face and virtual learning costs as faculty time on learning design is not tracked.

> The first time it takes a tremendous amount of time to construct the course online … you know you can have upwards of $100,000 into a course without too much attempt, … if you take those resources and you amortise those over five offerings or ten offerings or 20 offerings … making changes as you go to improve it … then your cost of course delivery goes down each time you offer … because you're not reinvesting that $400,000 every time. [similar to f-to-f] except you don't measure it [however] we don't time track on faculty members and how long they take to prepare for their courses, so we don't have a good gauge. (A5)

Discussing costs more broadly than other interviewees, digital leader A18 posits that ultimately, costs are dependent upon the model used by HEIs, and what they are "sensitive to" when it comes to cost:

> [describing different models] …it depends on the model … it depends on what year … how long we've been doing blended. If we're doing it year 1, it's not going to be any more cost-effective. If we're running year 10 it might be tremendously cost effective. So, it depends on your scope or your vision in terms of cost, and also it depends on what you're sensitive to in terms of cost. If you're only sensitive to curriculum materials and not building structures, not campus parking and other things … so it depends on what's in the model. (A18)

Lastly, whilst participant A19, who is the one interviewee not working within a HEI, does not discuss the costs associated with of learning with technology, the leader does suggest that to sustain, the focus of HEIs must be upon the efficacy of learning. In the following, the leader suggests that HEIs must reconsider teaching

approaches that focus upon identity development rather than curriculum delivery to the masses if they wish to remain relevant.

> Delivering physics 101, is no longer very important because there are MOOCS to do that…. the university has to focus on something different, which is helping students find their way through the world. So, if universities believe that their role is to convey information then they have been beaten by Google … If universities understand that their role is to help students discover who they are in the world… and find that position in the landscape of different practices that exist in the world, that's a very important role, but it is not something that is necessarily best done by delivering big lectures. So, that's where universities have to rethink what they can offer their students, that a MOOC cannot offer…that a big lecture cannot offer…. what I propose, is a shift of focus from the curriculum to the identity, because the curriculum can be delivered in mass, you know. Identity cannot be delivered through mass processes. But I think that requires a whole reorganisation of these institutions. (A19)

Although quality digital learning experiences are reliant upon appropriate funding, several digital leaders connect faculty challenges when it comes to prioritising pedagogic practice to the existential issue of insufficient government funding to HEIs and/or an interrelated accountability culture. For example, interviewee A9 explains in the following that faculty within his HEI work additional hours due to a national agreement between HEIs and governments. This limits faculty time spent on learning design which impacts the efficacy of learning design that is often basic.

> Time and workload issues, particularly since [government-HEI agreement]... has meant an extra [number of teaching hours]… [there is little time for practice] beyond the basics….[have not time to] … know the technology… know the pedagogy, ..[and address] practical issues in terms of implementation….[faculty can't attend PD] …aren't going to use it…[if they attend]… find it hard to … create the space to use the technology. (A9)

In the case of interviewee A14, the digital leader explains that the issue of reduced government funding to HEIs, has led to the assessment of faculty being based upon the revenue generated through their usage of technology, rather than the nature of their pedagogical practices. As a result, faculty are discouraged from concentrating upon pedagogy.

> There are huge pressures from reduced budgets from [government] … Our faculties and schools are all being assessed about how much income they bring in… look at more flexible ways of delivering programmes and trying to generate revenue. [Early-on] … people were interested in the pedagogy… now I would see its more hardnosed economics. (A14)

The digital leader also explains how this issue has reduced the level of learning and teaching support they can offer faculty.

> In order to support blended learning properly I feel we are under-resourced at [university name], and we could have double the size of team [learning support for entire HEI] and still not be having the impact we would like to have. (A14)

Relative to this, participant A15 stresses that plummeting government finance to his HEI is constraining the pedagogical potential of learning with technology. Commenting on this, the participant remarks that while technology can be used to support learners in developing their learning identities, this is not the case in practice.

> Unfortunately, just with budget cuts and things … we're just focussing on large class sizes... face to face or online... it's really frustrating …the initial intention was wonderful, it really was about student success and engagement, engaging them in a learning environment that was meaningful for them, providing the correct support so they could move on into higher education. (A15)

This interviewee also claims that a primary challenge for faculty across the HE sector is a focus on research over teaching, in the interest of income generation. This leaves little time or incentive for faculty to centre upon learning and teaching which is unrewarded.

> It's time … I had the three Rs – reward, recognition, and support … instructors, teachers, faculty members all over the world are … increasingly under pressure with the research. ... not to do pure research, it's to bring in funding for the institution …they're being rewarded for their research productivity and their grants… there's very little in terms of rewards for teaching, so why bother. (A15)

Differing from this, interviewee A7 notes that a shortfall in government funding has led to the introduction of a cost-effective pedagogical model to accommodate increased student numbers. Discussing a 'flipped model' selected by her HEI, the digital leader explains that it reduces the quality of pedagogy whilst growing the workload of faculty.

> [We are] ... under great pressure to reduce our costs like everybody else... the government has capped tuition. [In response] … undergraduate classes [are doubled, and faculty and students struggle] … flipped classrooms... boy are they going to be the thing that saves us…they want to video tape [faculty, while grad students facilitate in class active learning with 100/200 students] ... that model … it is ultimately way cheaper than it is for me to be course coordinator for the ten sections. (A7)

However, the interviewee explains in a follow-up question that funding is being made available specifically for courses with high learner enrolments, which faculty can apply for. This she believes is enabling innovation within her HEI.

> Application for blending learning funding is available at my institution. It is targeted for high enrolment courses. (A7 follow up)

Another interviewee A8 explains that while funding can be made available for digital learning support/innovation, this is often withdrawn after a period of time. As a result, the level of support they can offer faculty is reduced. The interviewee regards this as a universal issue across HEIs.

> [discussing supports] … one of the things that's happened, and I see this across the board, is that like the strategic innovation funding and stuff like that encourage people to employ people in this area [digital learning support/innovation], and when that funding is withdrawn (inaudible 57:02) have not been kept up…have costs gone up? … with inflation yeah …(A8)

A further point made by nearly one quarter of interviewees, is that the values and practices of those in leadership roles influences the practices and priorities of faculty. However, leaders can lack knowledge and/or appropriate support when it

comes to digital learning, which again suggests that the pedagogic possibilities of faculty practice are reliant upon investment in leadership within HEIs. The vital role of leaders in shaping pedagogy practice is encapsulated by interviewee A5 who explains in what follows that the practices, priorities, and values of leaders at varying levels across HEIs project onto teaching and learning practices irrespective of the supporting environment. Using an analogy of a 'seedbed' to describe the role of leaders in what follows, the digital leader warns that the most innovative faculty will inevitably be constrained if they are not appropriately supported by leaders.

> [online or face-to-face courses are] … an outcome of the leadership…the vision of the institution… the support, the encouragement, what senior leadership values gets translated down into the rank and file so to speak…. departmental leadership…the college level... institutional level leadership [equally important] … …a seedbed has to be prepared in order for your seeds to germinate … [faculty] a brilliant innovator… doesn't have the appropriate support systems…. environment to innovate, nothing...or very little is going to happen. (A5)

Another digital leader A15 similarly emphasises that distributed and collaborative leadership is a key enabler of innovation in HEIs.

> I think the key to a successful online and blended learning institutional initiative is a collaborative and distributed leadership approach. (A15 follow up)

A minority of digital leaders identify a need for leadership development in digital learning. This is necessary to help innovate faculty usage of technology for pedagogy. In the following, interviewee A4 stresses that leadership roles are not always valued and rewarded within HEIs despite digital learning innovation being dependent upon the capabilities of leaders. In view of this, the participant proposes that a leadership academy' be created to develop leadership capacity and that HEIs cultivate leadership in their practices.

> The importance of building leadership capacity... [one suggestion is] ...to support a leadership academy..… invest in leadership development… the culture in universities is such that taking on leadership roles is not necessarily being rewarded or valued in the past… people [must be] given pathways for their careers … recognition for the contributions that they're making... otherwise, we'll continue to get what we've always had. (A4)

Another Interviewee A8 who recognises the significance of institutional level leadership, emphasises in the following that most leaders of HEIs at a national level are unsure how to navigate digital learning. The interviewee connects the issue to a rapid shift in HE learning cultures coupled with a fear amongst leaders of taking risks due to inadequate funding.

> It is kind of fairly universal in [country name] ... we're not … as colleges, as our leaders, we're not thinking really strategically about the digital age and education in the digital age. That's not a criticism as such, I just think that it's happened so quickly, we don't quite understand how to handle it. A lot of people take the wait and see attitude – can't afford to lose money and take big risks around technology. (A8)

When asked about enablers of innovation within his institutions in a follow-up, interviewee A3 comments that this question is significant as digital learning is overlooked at a leadership level.

> Interesting question, [as] ... there has been little strategic focus on online learning at the highest levels. (A3 follow-up)

The evidence presented in this section shows that faculty are challenged with insufficient time and/or incentives to focus upon learning development and design with technology. There is a need for a digital learning 'support strategy' for faculty learning with technology to address constraints in their learning development and design. Moreover, consultations with different HE stakeholders in the process of strategy development can achieve a closer fit between policy and practice, and theory

and practice. My data also shows that technology must not be viewed as a panacea around efficiency matters - where it is used to simply disseminate the old content more efficiently. Digital learning must be appropriately invested in financially to ensure that learning experiences are of a high quality. Whilst difficult to measure, most digital leaders feel that the costs associated with digital learning are comparable to, or exceed, the cost of face-to face-learning. Digital learning shifts how money is utilised by HEIs. There is a need for upfront finance, as well as ongoing investments to support technological and pedagogical revision. This leads to the conclusion that technology and pedagogy are changing together giving rise to a different dynamic with consequences for how tutors teach, and students learn. My evidence also shows that the challenges experienced by faculty can be connected to insufficient government funding to HEIs and/or an interrelated accountability culture. In the interest of income generation and/or cost savings, HEIs can sometimes prioritise faculty research over teaching/pedagogical support, increasing student numbers or poor pedagogical models. This leads to the conclusion that that the pedagogic possibilities of faculty practice hinge upon appropriate government funding to HEIs. Furthermore, the evidence also shows that leaders can lack knowledge and/or appropriate support when it comes to digital learning which can negatively impact upon the practices and priorities of faculty. This leads to the conclusion that the pedagogic possibilities of faculty practice are also reliant upon investment into the leadership role within HEIs.

5.4 Discussion/Conclusion

Findings indicate that in general how technology and pedagogy relate to one another, is neglected by those in education. This is consistent with a minority of critical researchers who highlight that those in education accept technology as inevitable and rarely question the connection between technologies and education (Bulfin et al., 2015; Clegg et al., 2003; Selwyn, 2011). Selwyn (2010) who reflects upon decades of education research suggests that questions regarding the nature of technology use, the reasons for certain practices, and the implications of practices are overlooked in research. These are necessary to critically examine educational technologies in education. Findings discussed in this section further this work, and offer an insight into pedagogical practices, at institutional levels, from a purposeful sample of digital leaders across several HE institutions. The data contributes to our understanding of the relationship between education and technology, as it is manifested in teaching and learning practices.

The study suggests that digital learning must not be viewed as a panacea around efficiency matters - where it is used to simply disseminate the old content more efficiently. Quality learning experiences with technology do not reduce institutional expenditure. Findings are noteworthy as they refute the primary motivations driving HEIs to integrate digital learning. As mentioned in the literature review, there is a belief amongst some in HE that digital learning integration will achieve a triad of reducing costs, widening access through flexible learning provision, and creating effective learning experiences (Graham et al., 2005; Vaughan, 2007). Findings will be of interest to academic leaders charged with steering digital learning. There are limited institutional level studies in digital learning to inform HE leaders, (Graham et al., 2013; Mihai et al., 2021; Porter et al., 2014). Similarly, research neglects leaders in

the area of digital learning (Ciabocchi et al., 2016; Fredericksen, 2017; Jameson, 2013). It can also be suggested that findings undermine the credibility of "*technopositivists*" who are responsible for marketing digital learning to policymakers based upon an unsubstantiated promise that it will accomplish their learning needs and improve efficiencies as suggested by Njenga & Fourie (2010, p. 199).

An overarching finding in this chapter is that digital leaders foreground the importance of pedagogy, and instrumentalise technology as a means to the core purpose, which is learning. This is an important finding since pedagogy underscoring technology is largely disregarded by researchers up to now and makes it challenging to both question, much less shift technology usage for learning (Castañeda & Selwyn, 2018). In their discourse surrounding assessment, digital leaders highlight the value of assessment as a form of learning. Assessment as learning can be dynamic and flexible, as well as planned perhaps to involve peer tutoring/assessment, self-assessment, and can benefit from, indeed require, collaboration with others. These assessment approaches are suggested to improve learning and develop lifelong learning competencies. This is in line with a great deal of previous studies. For instance, Pereira et al. (2016) review of literature over a ten-year period shows that peer assessment is widely valued. Similarly, Vaughan et al. (2013) link a triad of peer-to-peer, self-assessment and instructor to deeper learning outcomes. Nonetheless, the current study identifies a need for HEIs to diversify their assessment approaches. Summative assessment is the most familiar form of assessment to learners/tutors. Moreover, a key finding is that technology itself or learning remotely in a virtual environment, are not a barrier to the use of more contemporary methods of assessment. The fact that technology is in fact an enabler of meaningful forms of assessment should help reduce a faculty mistrust of technology. In reviewing the literature, faculty continue to

question the quality and value of digital learning in HE (Allen, & Seaman, 2015; Ciabocchi et al., 2016). On the question of digital learning champions, the data shows that digital learning champions are pedagogues rather than technological experts. This outcome calls into question a determinist narrative of learning technologists, and some HE educators who claim that digital learning facilitates more effective learning experiences than face-to-face practice (Selwyn, 2011).

It is interesting to note that the shifting nature of technology and pedagogy in technology mediated learning experiences gives rise to a different dynamic which has consequences in how tutors teach, and students learn. This study finds that faculty struggle with achieving congruity between face- to-face and virtual learning as they lack pedagogical knowledge and design experience. As a result, technology is generally used to deliver content, rather than to create a balance of autonomy for learners and intervention/support on the part of faculty. To overcome this, there is a need for professional development. A need for faculty development is identified across a large volume of previous studies (Maile Cutri & Feinauer Whiting, 2018; Porter et al., 2014). However, findings contribute to literature by reducing a gap in research that recognises the dynamic relationship between technology and pedagogy and offers valuable insight to those in education who overlook this connection as identified by Selwyn (2011). In particular, the data may be of interest to HEIs who endeavour to understand how they might shift digital learning practice away from a transmissive focus (Marcelo & Yot-Domínguez, 2019). To date, there is a shortfall of pedagogically transformative learning experiences with technology within HEIs, that is widely acknowledged across literature (Englund et al., 2017; Kirkwood & Price, 2014; Torrisi-Steele & Drew, 2013).

On the topic of professional development, discreet and embedded professional development approaches need to be considered in tandem, as a skills-based technological approach to professional development is insufficient in itself. Moreover, professional development is most valuable to faculty when it supports their emergent pedagogical/technological needs and is embedded into everyday practice. Specifically, digital leaders in the study note the efficacy of faculty learning through community type activities/collaborations. Consistent with findings, Askerc Veniger (2016) study investigating effective CPD concludes that learning development must be an iterative process. As explored in the literature review, there is a growing recognition of the efficacy of faculty development through communities (Cox, 2004; Vaughan & Garrison, 2006; Wenger, 1998). However, the dynamic nature of faculty development is largely overlooked in conventional approaches to professional development. Prior studies indicate that professional development as a form of training tends to dominate across HEIs (Ginsberg & Ciabocchi, 2014). Therefore, findings in the study are extremely important as they identify a need for HEIs to adapt professional development practices and integrate more embedded professional development approaches. Furthermore, findings which show that an awareness of these different levels of faculty practice is important as it creates a clear picture of the developmental needs of faculty. This finding corresponds with those in a recent study by Porter and Graham (2016) and is important in view of a shortfall in faculty research.

It is interesting to note a need for a learning support strategy for faculty learning with technology, rather than a digital learning strategy. Digital learning strategy is regarded by many digital leaders as outdated since virtual technologies are ubiquitous within HEIs. Moreover, digital learning strategy is inappropriate as the focus must be on learning support, and therefore many HEIs integrate digital learning

issues into teaching and learning strategy. Findings also further confirm those in chapter four that learning with technology is naturalised into HEIs. Findings may also be of interest to HEIs as they challenge the notion of digital learning strategy development. For instance, research by Graham et al. (2013, p. 9) whose research looks at institution wide adoption of BL across six HEIs, concludes that HEIs with a mature level of BL implementation have "a well-established strategy". Moreover, digital strategy is now a feature within most European HEIs, even though many do inbuild it into teaching and learning strategy (Gaebel & Zhang, 2018). The data in the study also indicates that the voices of different stakeholders must be included in the generation of digital learning support strategies. This helps achieve a closer fit between policy and practice, and theory and practice. The findings are significant as there is little empirical research that investigates a triad of learners, administrators, and faculty needs in relation to digital learning (Bokolo et al., 2020). Findings also broadly support research that suggests a shared vision of the nature of institutional practices/roles in virtual environments ensures that the needs of different stakeholders are taken into regard (Moskal et al., 2013; Owston, 2013; Vaughan, 2007).

The research findings identify a need for HEIs to invest in the leadership role when it comes to learning with technology. The practices and values of those in leadership influence the pedagogical practices of faculty. Since leaders can lack both knowledge and appropriate supports when it comes to digital learning, the pedagogic possibilities of faculty practice are reliant upon investment into the leadership role within HEIs. These findings are significant in at least two major respects. Firstly, findings are insightful to HEIs as there is a scarcity in empirical research that centres upon the leadership role in digital learning, and studies at institutional level to steer HEIs, as already mentioned above. This research shortfall in noteworthy, in view that

administrations knowledge of digital learning can be limited, having little experience of this approach during their education (Moskal et al., 2013). Furthermore, Arnold and Sangrà (2018) who address leadership in eLearning, report a general absence of holistic research studies. It is plausible therefore to suggest that findings confirm the importance of holistic empirical studies for future research, given the nexus interviewees identify between leaders' practices and values and the pedagogical practices of faculty.

This study finds that what is possible pedagogically when it comes to digital learning hinges upon adequate government funding to HEIs. Consistent with this Bryan and Volchenkova (2016) who explore different models of blended learning argue that the potential for integrating meaningful models depends upon appropriate funding to HEIs. In the present study, findings show that faculty lack time and incentives to focus upon their teaching and learning practices. This finding matches those observed in earlier studies such as heavy workload (Oh & Park, 2009) or insufficient time, resources and supports (Vaughan, 2007) which hinder faculty development of digital learning. Significantly, the present study links these issues to inadequate government funding to HEIs and/or an interrelated accountability culture. In the interest of income generation and/or cost savings there can be an emphasis upon faculty research over teaching, a lack of pedagogical support for faculty, increased student numbers and/or poor pedagogical models integrated by institutions. These findings contribute to the literature/knowledge by reducing a dearth in research challenging a recurring assumption within national policy literature that digital learning requires less funding. Munro's (2018) review of national level strategy over a decade notes an assumption that digital learning reduces HE costs, increases production, and enriches learning, which has gone unchallenged in research. Findings

are also timely considering that HEIs are increasingly moving learning online due to a global health pandemic (Peters et al., 2020).

Chapter 6 Conclusion

The study set out to explore, through a series of qualitative interviews, digital leaders' understandings, perspectives and experiences of learning with technology. The holistic qualitative approach taken in this study considers the contexts of learning with technology within HEIs and addresses a dearth in research in qualitative BL studies. As discussed in section (3.1), empirical studies of BL are predominantly quantitative and evaluative in nature. The participants in this research, consisting of digital, are noteworthy as there is limited empirical work that focuses upon, HE leaders of online learning, or institutional level studies of BL as outlined in section (2.4). Moreover, the insights gained from the digital leaders, many of whom are globally renowned authors and pedagogues, are especially insightful to HE leaders of digital learning whose positions are often in their infancy. Equally, senior administrations knowledge of digital learning can be limited, having little experience of this approach during the education.

A number of major findings emerge from this study. Firstly, a key finding which responds to research question two is that technology and pedagogy are ever enmeshed. In this relationship between pedagogy and technology, pedagogy is foregrounded by the participants, and technology instrumentalised as a means to the core purpose of learning. Moreover, pedagogy and technology are dynamic as they are shaped by people whose learning needs differ. These are the fundamental constituents of meaningful learning with technology. This is the focus of research question two. Secondly, the research shows that all HE stakeholders need to recognise the relationship between technology and pedagogy and adapt their practices to facilitate learning with technology. Taken together, these findings have important implications

for policy and practice that can often overlook the relationship between technology and pedagogy as discussed in the next paragraph.

Chapter four shows that learning with technology is naturalised into HE learning cultures and "naturalised in people" as stated by digital leader A17. All learning involves the use of technology which renders the nomenclature of blended or digital learning outdated. More significantly, the representations are inappropriate as they privilege technology use over learning. On the same grounds, findings in chapter five suggest that digital/eLearning strategy be revised to use the term "learning strategy" as digital leader A3 suggests, "to emphasise the most important thing…teaching and learning". Collectively, findings question a longstanding assumption evident in research and in policy that blended learning is as digital leader A7 terms, "a brand-new innovation". As discussed in section (2.3), recent reviews of literature conclude that digital learning is not yet widespread in HEIs. Empirical studies are growingly concerned with BL/technology adoption/diffusion. Likewise, research is prone to investigating learning outcomes in virtual learning or comparing learning outcomes between different learning environments. Moreover, many of those in HE view digital learning as a better learning approach than face-to-face as discussed in section (2.3). A privileging of digital learning over face to face, fails to recognise that learning with technology is, as digital leader A9 encapsulates, "just learning". As a result, higher education learning experiences may not effectively support the diversity of needs amongst contemporary learners.

The research findings indicate that terminology specific to learning with technology are unsuitable which lays the groundwork for future research. It seems that blended or digital learning as a distinct field of study may be inappropriate considering that it reinforces an assumption that learning with technology is a new and a different

form of learning. The reconsideration of digital learning research as learning and teaching research would help shift this misconception. It would also ensure that studies such as this, which foregrounds the complex and overlooked relationship between pedagogy and technology, reaches a broader academic audience. As presented in section (2.3), to date most BL studies are published in specialised computer/technology journals. Findings will also be of interest to HEIs in which digital learning strategy is a common feature, as they show that HEIs may be, as stated by digital leader A2, "past the time" for stand-alone digital strategy. Findings that shed light on the ambiguity surrounding the term blended learning offer insight to researchers and educationalists who are challenged with defining the term since the inception of blended learning. All learning can theoretically be defined as blended since technology is a part of all learning experiences. Findings complement the work of researchers who argue against the use of the term blended learning. As reviewed in section (2.3), the earlier work of Meyer (2005) warns against the use of metaphors for learning with technology as they imply a different learning approach. Like Meyer, a paper by Oliver and Trigwell (2005) is critical of the nomenclature 'blended learning' as it neglects learning. The authors also question the suitability of blended learning as a research field. My evidence also endorses this stance.

Findings in chapter four show that the way technology is naturalised into HEIs differs. Learning with technology is shaped by disciplinary cultures that vary in their traditions of thinking about practice, learning, and what constitutes as knowing. The cultures influence in diverse ways, understandings and assumptions surrounding the nature of learning experiences with technology, the levels of difficulties experienced by disciplines designing virtual learning experiences, and the value of blended learning to disciplines. Whilst technology usage for pedagogy is influenced by the

learning aim of the discipline, most importantly it is steered by learners whose learning needs differ. Prior to this study there is limited research, or academics, that critically examine how education/pedagogy and technology relate to one another as considered in section (2.3). The findings that forefront the heterogenous nature of both disciplinary cultures of pedagogic practice and learners' identities, illustrate that there is no universal yardstick for best practice when it comes to learning with technology. How technology is formally used to support learning must ultimately be steered by learners' diverse and emerging needs. The findings offer insight to policymakers who invariably seek to measure teaching and learning outcomes against benchmarked learning and accreditation standards as addressed in section (2.2). This practice arguably homogenises disciplines and identities. Since digital leaders' understandings of learning with technology align with the rich situated learning perspectives of Lave and Wenger (1991), Rogoff (2003) or Wenger (1998), it could be argued that HE stakeholders would better understand the complex relationship between pedagogy and technology by viewing learning through a social learning lens.

A chasm exists between participants' perceptions and understandings of meaningful learning with technology that is the focus of research question two, and participants experiences of practice, which research question one sets out to establish. The study identifies meaningful assessment as a form of learning that is dynamic and collaborative, such as peer and self-assessment. This approach that potentially improves learning and learners' competencies, will be of interest to policymakers since lifelong learning and the innovative capabilities of learners are integral to tacking societal change and for learners' success professionally and as inclusive citizens. However, digital leaders' experience of practice, shows a need for HEIs to diversify assessment practices to include more formative assessment approaches, and for faculty

to move away from technology use for content delivery. Technology and pedagogy are changing together giving rise to a different dynamic with consequences for how tutors teach, and students learn. Getting the balance right between pedagogy and technology is difficult for faculty who are often inflicted with what digital leader A15 terms, "the 'course and a half syndrome'". Therefore, faculty must have opportunities to consider all aspects of their teaching using technology. Findings offer a deeper insight into the nature of faculty development that is neglected in previous studies. Namely, that collaborative type PD approaches embedded in the everyday pedagogic practices of faculty need to be considered in tandem with PD that is discreet and separate from practice. The varied focus, and nature of community interactions discussed by participants which range from partnerships to collaborations, to hybrid models involving a mixture of approaches, illustrate that faculty have diverse needs when it comes to their pedagogical development. Findings are of note to HEIs who traditionally adopt training approaches to PD as suggested in section (2.4), which overlook the ongoing nature of PD. As captured by digital leader A2, PD that engages faculty "with learning design so that they're actually creating the future…is what Carpe Diem stuff is".

Research question four seeks to determine how the priorities and approaches of HE policymakers regarding digital learning integration compare with those of faculty. While the current study identifies that the priories and practices of HE leaders occasionally conflict with those of faculty**,** findings point to a greater disconnection between HEIs and external funding bodies. The study shows that technology cannot be viewed as a panacea for matters of efficiencies- where it used to simply disseminate the old content more efficiently. Decisions revolving around learning with technology must be steered, as stated by digital leader A4 by the "quality of learning rather than

cost". Funding also needs to be ongoing to facilitate pedagogical and technological revision. However, findings identify that inadequate government funding, and/or an interrelated accountability culture, can constrain faculty learning development and meaningful learning design with technology. Although the issue of a governmental funding shortfall to HEIs exists, findings are noteworthy to governments in the current era. A requirement for learners to be equipped with 21st century learning capabilities necessary for societal and economic wellbeing, is more critical than ever before. Globalisation, climate change, and technological innovation are increasing at an exponential rate with accompanying issues that are in need of resolution as presented in section (2.1). Indeed, given the nexus between government funding and meaningful pedagogic practices, it is unsurprising that graduates are lacking in these learning competencies as noted in section (2.2). Findings will also be of interest to HE leaders who often believe that digital learning will simultaneously reduce costs and improve the efficacy of learning as discussed in section (2.3). This erroneous assumption is unsurprising considering that the study also identifies a lack of investment in HE leadership roles. As highlighted by participant A5, leadership roles must be supported at all levels as leaders lay a "seedbed" that determines the pedagogic possibilities of faculty practices within HEIs. These insights also challenge the promises pertaining to digital learning which research often fails to do as detailed in section (2.3). Findings broadly support key authors (e.g. Kanuka & Brooks, 2010) who discussing the marketisation of HEIs in 'post-Fordist' times, conclude that flexibility and cost savings cannot be achieved simultaneously with effective learning experiences with technology (2.4).

The third research question centres upon the key enablers and inhibitors of innovation in digital learning across HEIs. Enablers of innovation include institutional

structures such as government funding and leadership investment, coupled with supports that demand collaboration. Innovation is inhibited when these enablers are absent. The latter notion of community and collaboration threads through digital leaders' understandings of meaningful learning with technology, effective faculty supports, and learning support strategy that digital leader A15 remarks is "a meeting of the minds between senior administration, faculty and the students". This will be of interest to academics. Disciplinary erosion and identity displacement are longstanding faculty concerns highly documented in educational literature. As discussed in section (2.3) it is argued that policymakers have shifted knowledge development away from disciplinary control. This has given rise to the marketisation of HEIs and the accompanying managerialist agendas within HEIs. Findings in the current study suggest that technology has the potential to reinstate the traditional collegiality that is valued by academics. This is encapsulated by digital leader A15 when discussing the efficacy of 'community of enquiry' and the notion of 'communities of practice' who comments, "Oxford and Cambridge traditions…that's why our universities were created… scholars wanted to get together to share their work…just like community of practice, they wanted to enculturate new people into their community… what is new is old – we're going back to sort of our original idea of a community….communities can form everywhere because of the powers of these technologies for rich conversations". This finding corresponds with the perspectives of a small number of leading authors in the area of digital learning as discussed in section (2.4). Realising this however, as found within this study, is to first recognise the enmeshed relationship between technology and pedagogy.

Although the current study is based on a relatively small sample of participants which might be considered a research limitation, the participants are rich in their

experience of digital learning and diverse in their international settings. As mentioned in section (3.3) all participants are digital leaders. Moreover, many are working within HEIs with high international rankings and/or HEIs renowned for their expertise in digital learning. Approximately one third are world renowned pedagogues and authors.

Going forward, there is an urgent need for further research that pays attention to the dynamic relationship between pedagogy and technology as it not always recognised or supported by, HE stakeholders, as identified in the study. This issue is longstanding as noted in section (2.3). This focus demands that researchers adopt holistic qualitative approaches that are neglected in digital learning research which to date is mostly quantitative. Qualitative studies help capture the "messiness" Mertens (2005, p. xvii) and complexity of lived experience with teaching and learning using technology. A natural progression of this work would be for additional studies to focus upon leaders responsible for digital learning since as digital leader A4 suggests, "the culture in universities is such that taking on leadership roles is not necessarily being rewarded or valued in the past". Moreover, as mentioned by digital leader A3, "to some extent there has been little strategic focus on online learning at the highest levels". There is also a shortfall in studies into leaders when it comes to digital learning as pointed to above. These studies might focus upon the notion of technology as a panacea around matters of efficiencies along with the efficacy of learning.

Future research could usefully focus upon faculty development considering that faculty lack pedagogical knowledge and learning design experience when it comes to technology usage for pedagogy. Faculty development is an especially important research area since there is a need for faculty to diversify their assessment approaches to include assessment as a form of learning. Research studies, might, for

example, look at ways that collaborative forms of faculty development that are embedded in faculty everyday pedagogical practices could be supported by HEIs, since faculty development is ongoing. This focus is also important as professional development is overlooked in research on BL. Further work is also needed to fully understand the implications of inadequate government funding upon the pedagogical practices and priorities of faculty. A question arising from this study in need of further investigation, is the impact of inadequate funding upon learners' competencies. This is in view that developing learners 21st century skills through meaningful learning experiences with technology is necessary for economic and social wellbeing. Furthermore, it is suggested that future research cease using a vocabulary specific to learning with technology. Researchers might reconsider the terms 'blended' or 'digital' as "just learning" (A9), as technology and pedagogy are ever enmeshed. Doing so would help ensure that research concerning learning with technology reaches a wider academic audience. This may help shift HE stakeholders thinking away from an assumption of learning with technology and learning as being separate, and thereby privilege pedagogy over technology use in the dynamic relationship between technology and pedagogy. Lastly, although the study commenced several years ago since learning with technology has long been an issue within higher education, the timing of writing of this study is noteworthy. The current COVID-19 global health pandemic amplifies ideas around learning with technology. Learning with technology is of great significance in the minds of educators who are increasingly moving learning online.

In sum, it is hoped that findings in the study will be disseminated via conferences such as those held by 'Educational Studies of Ireland' (ESAI), and through publications in prestigious journals. With regards the latter, I would hope to

develop an empirical paper where I present the findings and main arguments in journals such as the 'International Journal of Educational Technology in Higher Education', the journal 'Technology, Pedagogy and Education' or the 'British Journal of Educational Technology. I would also hope to develop a literature review type paper and present it in a journal such as 'Irish Educational Studies'.

6.2 Limitations of the Empirical Study

Findings in the study foreground the centrality of the learner to decisions relating to the nature of pedagogical practices within HEIs, and also the supports and structures at institutional level. Nevertheless, a limitation of the study is a lack of direct insight into HE learners' perspectives, understandings and experiences of learning with technology. Findings show that pedagogy and technology are dynamic since they are shaped by people whose learning requirements differ. However, a crucial area of focus for future research is the relationship between learning with technology and learners' diverse learning needs from the learners' perspective. This focus is also important since some leaders in the present study suggest that it can be challenging to strategically integrate the student voice. Furthermore, there is a need for research that explores issues relating to digital citizenship and access to HE impact HE learners'/perspective learners. Discussing the importance of digital inclusion and access to HE, one leader in the present study explains that "digital inclusion is about citizenship…the ability to take part in the goods of society very significantly". Whilst learning technology must be embraced by HEIs, the leader notes that there are those who can be excluded such as individuals from poorer socioeconomic backgrounds along with a proportion of the older population who "have not moved with technology". Similarly, issues surrounding individuals access to HE and digital

learning are pointed to by leader A3 who stresses that digital learning may not be "widening access to people who'd never have gone to university".

6.3 Recommendations

Findings from the study will be of interest to a variety of HE stakeholders. These include HE faculty who are formally integrating technology into their teaching and learning practices, HE faculty charged with leading initiatives concerning teaching and learning with technology, and HE policymakers both within and external to HEIs.

The following are a list of recommendations that are based upon key findings from the empirical study.

Discreet, and Embedded Professional Development Approaches

Faculty development plays a crucial role in growing faculty knowledge and skillsets concerning learning design with technology and thereby increases the potential for effective learning experiences using technology. Faculty often lack confidence, pedagogic knowledge and the design capabilities when it comes to integrating technology into their practice. Pedagogy is difficult to enact in virtual settings. Faculty new to digital learning struggle with achieving congruity between virtual and face-to-face learning. A skills-based technological approach to professional development alone is not effective enough. Faculty development is an ongoing process. Therefore, discreet, and embedded professional development approaches need to be considered in tandem. Community plays a key role in innovative faculty usage of technology for pedagogy. Therefore, HEIs should focus

upon nurturing community approaches to professional development. This might involve partnerships, collaborations, or hybrid models involving a mixture of approaches, depending upon faculty needs. An awareness of what levels of faculty practice is also important as it helps create a clear picture of the developmental needs of faculty.

Scaffolding is a Key Pedagogic Elements that Faculty need to Learn when using Technology

The pedagogic elements faculty need when using technology involve the notion of scaffolded learning. There is a need for faculty to adopt the role of learning facilitator. There can be an inability amongst undergraduate learners specifically in self-direct their learning. Faculty must use technology to create a balance of autonomy for learners and intervention/support on the part of faculty.

Priviliging Pedagogy in Terminology

The term blended learning is inappropriate and outdated. There is a need for HEIs to select terms that privilege learning, and recognise that technology is a resource for learning that is now naturalised into HE learning experiences. Technology is used to support all HE learning experiences. There is a complexity of understanding and defining blended learning as it concerns learning. A learning process is nuanced and shaped by differing learning cultures (e.g., disciplinary traditions) along with the identities of those involved in the learning process.

Adequate Funding to HEIs

Technology should not be viewed as a panacea around efficiency matters - where it is used to simply disseminate the old content more efficiently. Digital learning must be appropriately invested in financially, to ensure that learning experiences are

of a high quality. Due to pedagogical/technological revision there may be a need for ongoing investment into learning with technology in addition to upfront funding. It would seem that the pedagogic possibilities of faculties' practices hinge upon adequate funding to HEIs. Insufficient government funding to HEIs, and an interrelated accountability culture, can negatively impact faculty practice. This is especially noteworthy considering a nexus between HE pedagogical practices and the development of learners' 21st century capabilities that societal wellbeing relies upon, which is documented in policy and educational literature.

Investing in the Leadership Role within HEIs.

Leaders can lack knowledge and/or appropriate support when it comes to digital learning. This is noteworthy as leaders' values and their practices influence the practices and priorities of faculty. Thus, the efficacy of faculty pedagogic practice is reliant upon investment into the leadership role within HEIs.

A Learning Support Strategy Informed by Different Stakeholders

There is a need for a learning support strategy for learning and teaching with technology that engages with different HE stakeholders. This will provide a better fit between policy and practice, and theory and practice. HEIs might consider moving away from a notion of a digital learning strategy that is stand alone. Digital strategy can privilege technology use over pedagogy by suggesting that digital learning is a different approach to learning. While all stakeholders' needs are equally important, learning support strategy should pay close attention to the faculty requirements. Faculty are often constrained by insufficient time and/or a lack of incentives to prioritise their pedagogical practices.

Diversifying Assessment Approaches

There is a need for HEIs to diversify and utilise a greater variety of assessments, in addition to summative forms. Assessment approaches that are formative and collaborative have the potential to help improve learning quality and learners' competencies in relation to their discipline. Assessment as a form of learning, can be continuous, dynamic and flexible, as well as planned perhaps to involve peer tutoring/assessment, self-assessment, and can benefit from, indeed require, collaboration with others. Technology itself or learning remotely in a virtual environment is no barrier to the use of more contemporary methods of assessment.

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Appendices

Appendix A Interview Schedule

Section 1 Interview Overview

- Interviewers Name
- Research Participants Name
- Title of Position/Role Held by Participant
- Institution Name
- Date of Interview
- Time of Interview
- Interview Start Time
- Interview Completion Time

Section 2 Demographics of Participant and Institution

- Retrieved through desk research.

Section 3 Research Questions

1. What does your position involve at (HEI name)?

2. What is your understanding of the term blended learning? How would you compare it to fully online learning?

3. I wish to establish the level of blended learning practice within each institution participating in my study. I am using (Everett M. Rogers, 2003) 'Diffusion of Innovations' "Adopter Categories", as a guide. In your opinion, what stage do you believe [HEI name] is presently at; early (0-16%), intermediate (16-84%) or advanced implementation (84%-100%)? (faculty uptake/use of blended learning)

[Rogers (2003, p.281) “Innovators” and “Early Adopters” categories are grouped to form the stage early implementation of DL (0-16%) using technology. Rogers (2003, p.281) categories “Innovators” “Early Adopters”, “Early Majority” and “Late Majority” are combined to form the stage intermediate DL implementation (16%-84%) using technology. The third stage advanced DL implementation (84-100%) using technology, combines all Rogers (2003, p.28) categories (five) inclusive of what he terms “Laggards” who are the final ones to embrace innovation.]

4. Do you think that blended learning practice is evenly distributed among disciplines?

5. What stage would you consider the following disciplines to be at regarding blended learning practice early, intermediate or advanced blended learning implementation at [HEI name]?

A. Humanities and Arts

B. Sciences

C. Business/law

D. Medicine/health

8. Pedagogically, do you think that certain disciplines are easier to blend?

A. Humanities and Arts

B. Sciences

C. Business/law

D. Medicine/health

9. Can you describe a typical blended course at your HEI?

10. Typically, what is the nature of blended learning assessment within the different disciplines? (Is it formative or summative, peer/self-assessment?

A. Humanities and Arts

B. Sciences

C. Business/law

D. Medicine/health

11. In blended learning programs do faculty provide feedback to students on their learning? Is this feedback formative or summative in nature?

12. Have you experienced any issues in providing feedback to large student numbers in online environments?

13. Is feedback obtained from students, about their experience of learning in blended learning environments?

14. How does blended learning compare between professional programs/courses and more straight academic areas?

15. How does blended learning compare between undergraduate and postgraduate courses?

16. Does your university actively promote the development of particular eLearning practice/pedagogy to faculty?

17. Can you think of any recurrent difficulties that you have been made aware of, which are experienced by learners in blended learning environments? Are any of these difficulties discipline specific?

18. Would you be aware if there is any training and support available to students who are learning or about to learn in online environments at your institution?

19. In your opinion, what are the main reasons that [HEI name] has embarked upon blended learning initiatives?

20. How do you think blended learning compares to traditional face-to-face learning?

21. What effect do you think blended learning has had on the following aspects?

A. Student enrolment

B. Retention of students / course completion

C. Satisfaction with the college experience

D. Employability

22. What do you perceive to be the dominant motivating factors that entice academic faculty to engage in online practice?

23. What do you perceive to be the primary demotivating factors preventing faculty from engaging in online practice?

24. Is there an e-learning Strategic plan in place at your institution?

25. What type of approach do you think [HEI name] has taking in developing eLearning strategy? [prompt] A top-down, bottom-up, middle out (combination of both) or other?

26. How effective is [HEI name] eLearning Strategy in your view?

27. Are the perspectives of / or feedback from other stakeholders in the university considered in the development of eLearning policy i.e., faculty, students and administration? If yes, how is this feedback obtained?

28. Do you perceive costs associated with blended learning practice to be more or less than traditional face-to-face teaching and learning?

29. Does your institution offer professional development courses in blended learning to faculty? Is professional training in blended learning obligatory for staff?

30. Do you think professional development is important?

31. Do you think that faculty training and development in online learning practice would increase the level of uptake of blended learning.

32. Does your institution monitor the quality of BL programs? For example - Student Satisfaction/engagement/Grades? How is this achieved?

33. In your opinion do innovators/champions of eLearning influence blended learning adoption among faculty at your institution?

Section 4. Closing

Thank you very much for participating in this research study. Both your time taken and your patience for this interview are greatly appreciated.

34. Are there any further comments you would like to add, which you believe may be beneficial to this research study?

Appendix B Ethical Approval

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Oifig an Leas - Uachtaráin Taighde agus Nuálaíochta
Office of the Vice President for Research and Innovation

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University College Cork,
College Road, Cork, Ireland.

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E vpresearch@ucc.ie
www.ucc.ie

Catriona Curtin,
School of Education

13th June 2014

Dear Catriona,

Thank you for submitting your research (project entitled: An Exploration into the Cultural Perspectives of eLearning in Higher Education Institutions) to SREC for ethical perusal. I am pleased to say that we see no ethical impediment to your research as proposed and we are happy to grant approval.

We wish you every success in your research.

Yours sincerely,

Mike Murphy,
Chair of Social Research Ethics Committee

Professor Anita R.Maguire BSc PhD CChem MRSC
Vice President for Research and Innovation

Ollscoil na hÉireann, Corcaigh
National University of Ireland, Cork

Appendix C Invitation to Participate in Study

Dear [Leader Name],

My name is Catriona Curtin. I am a PhD scholarship student with the School of Education at University College Cork, Ireland. My empirical research is aimed at investigating cultures of e-learning practice within tertiary institutions globally and seeks to establish and appraise the perspectives of key individuals working therein. The outcome of the study will provide valuable information and insight to tertiary institutions endeavouring to implement e-learning initiatives. There is a dearth of research in this area despite the current demand for technology-enhanced learning.

[Leader Name], your being an acknowledged contributor in the field of technology enhanced learning, I write to you and seek your valued participation in my research study. This would simply consist of an online interview. Should you be unable to participate I would appreciate if you could nominate a colleague.

I will be delighted to forward additional information to you if requested.

I thank you for your time and consideration.

Kind regards,

Catriona

_____

Catriona Celeste Curtin

PhD Researcher

School of Education

University College Cork

Munster Ireland

Appendix D Informed Consent Form

School of Education, UCC – Research Study

Strand 1: Semi-Structured Interviews with Directors of E-Learning

INFORMED CONSENT FORM FOR RESEARCH PARTICIPANTS

Information Sheet

Purpose of the Study.

As part of my PhD in Education at University College Cork I wish to carry out a research study. The study seeks to examine the cultures of e-learning practice in various higher education institutions globally, by establishing and appraising the perspectives of different stakeholders towards blended learning practice.

What will the study involve?

This study will involve your participation in a semi-structured interview, which will take place either face-to-face or online via Skype, depending on your geographical location. The duration of the interview will be between 30-45 minutes depending on your time constraints.

Why have you been asked to take part?

You have been asked to participate in this study, as you are one of the key individuals charged with promoting blended learning at your institution. This study seeks to establish barriers and affordances encountered by individuals who are involved in blended learning initiatives, which will provide valuable insight into how blended learning practice transcends from early stage to advanced implementation.

Do you have to take part?

Participation in this study is entirely voluntary. You will be asked to sign a consent form prior to commencement of the interview. You are permitted to keep the information sheet and a copy of the consent form. You have an option of withdrawing before the study commences even if you have already agreed to participate. You may discontinue with the interview at any stage, even after data collection has started. You may withdraw from this study within two weeks of participation and your data will be destroyed.

Will your participation in the study be kept confidential?

Your identify will remain anonymous. I will do my utmost to ensure that no clues to your identity will appear in the thesis. Any extracts from what you say that are quoted in the thesis will be entirely anonymous, for example, your name and your institution will not be used.

What will happen to the information which you give?

The data will be kept confidential for the duration of the study. On completion of the thesis, data will be retained for a further six months and then destroyed.

What will happen to the results?

The results will be presented in my PhD thesis. They will be seen by my supervisor, a second marker and the external examiner. The thesis may be read by future students on the course. The study may be published in a research journal.

What are the possible disadvantages of taking part?

I do not envisage any negative consequences for you in taking part.

What if there is a problem?

At the end of the interview, I will discuss with you how you found the experience and how you are feeling. If you subsequently feel distressed, you should contact me via e-mail: 112222534@umail.ucc.ie or by telephone at: [Number].

Who has reviewed this study?

Approval must be given by the Social Research Ethics Committee (SREC) at University College Cork before this study can take place.

Any further queries?

If you require any further information, you can contact me, Catriona Curtin at;

Mobile: [Number] or e-mail: 112222534@umail.ucc.ie

If you agree to take part in the study, please sign the consent form overleaf.

Consent Form

I.....agree to participate in Catriona Curtin's research study.

The purpose and nature of the study has been explained to me in writing.

I am participating voluntarily.

I give permission for my interview with Catriona Curtin to be tape-recorded or in the event the interview takes place online, I give permission for the online interview to be recorded.

I understand that I can withdraw from the study, without repercussions, at any time, whether before it starts or while I am participating.

I understand that I can withdraw permission to use the data within two weeks of the interview, in which case the material will be deleted.

I understand that anonymity will be ensured in the write-up by disguising my identity.

I understand that disguised extracts from my interview may be quoted in the thesis and any subsequent publications if I give permission below:

(Please tick one box:)

I agree to quotation/publication of extracts from my interview ☐

I do not agree to quotation/publication of extracts from my interview ☐

Signed..... Date.....

RS Ver 6 2/11/07

Appendix E Information Sheet

An Exploration into the Perspectives of Stakeholders in Higher Education Institutions Regarding Cultures of Practice in eLearning

Empirical Research Study

Qualitative Interview

Directors and Champions of eLearning

Researcher: Catriona C. Curtin

PhD Candidate, School of Education, University College Cork

Tel: [phone number]. E-mail: 112222534@umail.ucc.ie

1. Opening:

I wish to thank your agreeing to participate in this research study. Please be aware that your identity will remain entirely anonymous, and you will obtain access to the results of this research should you so desire. You can withdraw from this interview at any stage and for any reason. Any questionnaire items that you do not wish to respond to, can be removed. In the event that the results of this study are published, your identity will remain anonymous.

2. Purpose of Research Study:

This study seeks to examine the cultures of e-learning practice within tertiary institutions globally by establishing and appraising the perspective of key stakeholders working within different institutions, towards blended and online learning practice. This research study will attempt to identify the barriers and affordances encountered by participants whilst implementing blended learning, in particular those encountered in the transition between early, intermediate and advanced stages of e-learning adoption. The purpose of this study is to better understand the manner in which e-learning can be embedded into the cultures of practice operating within universities and uncover ways in which barriers to e-learning implementation might be overcome. [HEI name] has been selected to participate in this empirical research study in view of the outstanding academic reputation that it holds.

3. Motivation:

The outcome of this research study will provide valuable insight to higher education institutions worldwide endeavouring to implement blended learning initiatives, and to institutions transitioning between the stages of early to intermediate or intermediate to advanced implementation. An appraisal of the perspectives of different stakeholders will provide a deep insight into the various cultures of practice operating within higher education institutions and the role that these cultures play in transformation process within institutions.

4. Timeline:

This interview will take between 30-45 minutes approximately.

5. Overview of Key Headings and Illustration of Questions

(In no particular order)

5.1 Definition and Stage of E-learning Implementation

There is much debate surrounding the exact definition of blended and online learning within tertiary institutions. This section will include questions about your institutions' definition of online and/or blended learning.

5.2 Purpose of e-Learning Practice – Motivating Factors.

The reasons for embarking upon e-learning initiatives may vary drastically among the various stakeholders within higher education institutions. Questions within this section, seek your perspective regarding topics such as the purpose of e-learning, institutional factors for implementing e-learning and the motivating factors enticing faculty to engage in online teaching and learning.

5.3 E-learning Strategy and Developing Policy and Strategy

This section includes questions concerning e-learning strategies and approaches.

5.4 Developing e-learning Practice

This section is comprised of questions surrounding pedagogical approaches and experimentation in online environments, and the barriers and affordances which are encountered in the transference of courses from face-to-face to online settings.

5.5 Changing Mindsets of Faculty

This section seeks to establish the factors that may hinder faculty adoption of e-learning practice and ways in which the mindsets of faculty opposed to online teaching and learning might be changed.

5.6 Faculty Training and Development in E-learning Practices

Questions in this section surround the relationship between staff development and eLearning.

5.7 Pedagogical Quality Assurance

This section enquires about quality assurance in e-learning pedagogy.

5.8 Paradigms and E-learning

Questions in this section concern the relationship between theoretical paradigms and e-learning and issues surrounding the development of learner-centered pedagogy.

5.9 Student Perspectives

Questions in this section explore feedback measures and student learning in online environments.

5.10 Transitioning Between Stages

This section is comprised of questions on the subject of scaling of e-learning practice.

5.11 Innovators / Champions of E-learning

Questions in this section investigate the relationship between innovators or champions of e-learning and faculty adoption of e-learning practice.

5.12 Course Selection and E-learning

In this section you will be asked questions about the selection criteria of courses for online environments.

Appendix F Ethical Approval for Research Amendment

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Catriona Curtin <112222534@umail.ucc.ie>

Amendment Request - Approved
3 messages

Ethics Committee, Social Research <srec@ucc.ie> Mon, Aug 27, 2018 at 1:01 PM
To: Catriona Curtin <112222534@umail.ucc.ie>

Dear Catriona

The Social Research and Ethics Committee has approved the amendment, as outlined in your recently received email, to your application which was originally approved in 2014 entitled "'Cultural Perspectives of eLearning in Higher Education Institutions'

The committee wishes you every success with your research.

All the best

Liz

Appendix G Invitation to Respond to Follow-Up Question

Dear [Participant Name]

You will recall participating in an interview some time ago for my PhD research study, which concerns cultures of blended learning practice across higher education institutions.

I am at present nearing the end of my research and as a follow-on from these interviews, I am asking champions to answer one further question in order to complete my empirical study. I would be most grateful if you could take a moment to answer the question.

Q. Could you specify one thing your institution has done that has enabled innovation in online and blended learning? Or perhaps you can suggest something that has created a breakthrough at your own institution?

As my work currently stands, I am using pseudonyms for all my interviewees and their institutions. This is obviously designed to protect confidentiality and anonymity. However, if you would prefer your real name and institution to be noted in the study please let me know. If I don't hear from you on this issue, I will use a pseudonym.

Sincere thanks for your participation. I am most grateful for your time and your valuable perspective.

Kind regards,

Catriona Curtin