The Yin & Yang of Digital Technologies: a case study exploring the impact of a digital wellbeing intervention on higher education staff

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Declaration

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of, Doctor of Education is entirely my own work, and that I have exercised reasonable care to ensure that the work is original, and does not to the best of my knowledge breach any law of copyright, and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

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Abstract

Suzanne Stone

The Yin & Yang of Digital Technologies: a case study exploring the impact of a digital wellbeing intervention on higher education staff

A growing focus on the concept of 'digital wellbeing', has emerged over the last decade in the literature across a range of sectors including: human-computer interaction; sociology; and education (Calvo & Peters, 2018; Gui, Fasoli & Carradore, 2017; Biggins & Holley, 2020). Across the literature, digital wellbeing is broadly understood as the positive/negative impact of digital technologies on wellbeing and in the author's context as an academic developer in higher education, the term articulates a key challenge in respect of supporting staff to embed digital technologies in work practices. The author observed staff struggling with balancing the benefits of digital technologies against the challenges that digital technologies can present to workplace wellbeing. To address this concern, a case study was designed to explore the impact of a digital wellbeing intervention on staff in a higher education context. The findings demonstrate the positive impact of the intervention on participants' capability to manage the challenges presented by digital technologies. The intervention also re-focused participants' attention on the benefits of digital technologies in the higher education workplace. This study makes several contributions to the literature. The development of a theoretical model of digital wellbeing in the workplace can support future research on digital wellbeing in the workplace. The study offers evidence of the impact of an intervention on behaviour change and analyses the contextual factors impacting digital wellbeing. The study offers insights on remote working during the specific context of the Covid-19 pandemic, which can inform future support for staff engaging in remote and hybrid working. By including staff in non-teaching roles, the study highlights the need to support all staff in higher education in respect of digital wellbeing. Finally, the digital wellbeing intervention materials are now available through creative commons for use and/or adaptation to support digital wellbeing.

Chapter 1 Introduction

1.1 Digital Wellbeing: An emerging field of study

The phrase ‘digital wellbeing’ was first used in the technology sector to describe the impact of technology design on the wellbeing of users (Harris, 2012). Over the last decade, a growing focus on the concept of ‘digital wellbeing’ has emerged across several disciplines including sociology; human-computer interaction; technology; and education (Gui, Fasoli & Carradore, 2017; Calvo & Peters, 2014; 2018; JISC, 2019; Biggins & Holley, 2020). More nuanced and comprehensive definitions of digital wellbeing have been developed in the fields sociology and education. Such definitions draw on the literature on general wellbeing, and acknowledge the contextual factors impacting digital wellbeing (Gui, Fasoli & Carradore, 2017; JISC, 2019; Biggins & Holley, 2020). Most recent work calls for further re-framing of digital wellbeing as a dynamic state (Vanden Abeele, 2020), and challenges approaches developed by the technology sector to address the challenge of digital wellbeing (Dennis, 2021).

Research to date exploring the impact of digital technologies on wellbeing focuses largely on evaluating approaches and interventions designed to address digital wellbeing including training interventions and digital disconnection strategies. The research relating to the impact of training interventions focuses on particular workplaces (Bordi *et al.,* 2018; Rich, Aly, Cecchinato *et al.,* 2020) and educational contexts (Gui *et al.,* 2018; Themelis & Sime, 2019). The emerging research on digital disconnection explores the use of digital wellbeing applications and concentrates largely on disconnection from smartphones or mobile connectivity (Biedermann, Schneider & Drachsler, 2021). Studies exploring broader and more nuanced strategies to manage digital wellbeing without total disconnection are also emerging (Nguyen, 2021).

While the nascent research offers promising findings in relation to the potential for digital wellbeing interventions to impact positively on digital wellbeing, there is limited evidence demonstrating the impact of interventions on attitude and behavioural change (Themelis & Sime, 2019; Biedermann, Schneider & Drachsler, 2021). In the context of education, while the focus to date has been on student digital wellbeing at second level (Gui *et al.,* 2018; Themelis & Sime, 2019) and on staff in teaching roles (ibid.), additional work is required

to explore the digital wellbeing of staff in non-teaching roles in higher education (JISC, 2020; Biggins & Holley, 2020). Furthermore, although the JISC (2019a) and DigCompEdu (Punie & Redecker, 2017) frameworks provide guidance for both staff and student digital wellbeing from a capabilities/competence perspective, contextual factors influencing digital wellbeing such as organisational cultural norms and practices have largely been neglected (Biggins, Holley & Zezulkova, 2017). Themelis & Sime (2019) also note a dearth of interventions at higher education level, and call for further research on the impact of digital wellbeing interventions beyond short term awareness to examine "changes in the behaviour (or habits), beliefs, and attitudes of participants, i.e. evaluations that go beyond looking at gains in understanding and knowledge" (p. 22). Finally, while a current trend in the literature focuses on the potential of digital technologies to concurrently impact both negatively and positively on workplace wellbeing (Bordi *et al.*, 2018; Potter *et al.,* 2021) there are also calls for more work exploring the positive potential of digital technologies in the education workplace (Passey, 2021).

This study seeks to build on these developing understandings of digital wellbeing by addressing some of the gaps identified in the literature to date. A case study was designed to explore if and how a digital wellbeing intervention can support staff in a higher education context to manage their digital wellbeing. To contextualise these research aims and rationale for the study, the researcher's positionality is articulated in the following section. The chapter continues by offering an overview of digital wellbeing in the specific context of the higher education workplace followed by an outline of the rationale for the study and the specific research questions. Drawing on the literature in the field, a definition and model of digital wellbeing in the workplace used to guide this study are presented. The contribution of the study to the literature is summarised, and finally the structure of the thesis is explained.

1.2 Positionality statement

It is widely acknowledged that researchers should reflect upon and articulate how their own positions and experiences might contribute to their interpretations of people's lived experiences (Creswell, 2014; Denzin & Lincoln, 2011; Leech & Onwuegbuzie, 2010). As an academic developer working in a higher education context with a specific role in digital technologies, my role at the time of conducting this study focused largely on the positive

potential of digital technologies in supporting staff to achieve workplace goals and to improve their work practices. However, I observed over a number of years the challenges that staff face in terms of the growing use of digital technologies, manifesting as a potentially negative impact of digital technologies on workplace wellbeing. In particular, since the Covid-19 pandemic and subsequent wide-scale move to remote working for those in higher education roles, the potential for negative impact increased, as staff who would prefer to engage minimally with digital technologies were pushed to a greater reliance on these tools. This concern in relation to workplace wellbeing in the context of the ever increasing use of digital technologies was the basis for this study.

An initial examination of the literature on digital wellbeing was influenced by the challenge to move beyond a simplistic polarisation of 'technophiles and technophobes' (Lewin, 2016) when supporting the integration of digital technologies in education. Furthermore, the call for a more critical analysis of the language used in relation to digital technologies in education has caused the researcher to question assumptions that digital technologies always enhance education (Bayne, 2015; Facer & Selwyn, 2021). Bayne's (2015) work in challenging the use of the term 'technology enhanced learning' has been particularly influential. The use of the word 'enhancement' implies that technology can only have a positive impact on learning and calls on practitioners to question their assumptions about digital technologies in higher education. Following a similar argument, Facer & Selwyn (2021) question the framing of educational technologies as quick 'techno-fixes' to the challenges facing education, and lay the foundations for what they describe as 'non-stupid optimism' regarding educational technologies. Drawing on this work, the researcher considered the emerging definitions and models of digital wellbeing to reflect a more nuanced understanding of digital technologies as having the potential to both positively and negatively influence workplace wellbeing (JISC, 2019a; Vanden Abeele, 2020). Furthermore, emerging research offered evidence of this dual potential (Bordi *et al.*, 2018; Potter *et al*., 2021).

As an academic developer, a key aspect of my role involves designing, delivering and evaluating professional learning interventions. At the core of this work is the assumption that professional learning interventions can impact the work of academics and others working within the higher education sector. Building on this assumption, the focus for this research study was to explore the potential of a professional learning intervention to

support staff to manage the challenges presented by digital technologies to workplace wellbeing and to leverage the positive potential of digital technologies. Finally, as a trained acupuncturist and student of Traditional Chinese Medicine, I was drawn towards the metaphors in the literature of wellbeing as a state of balance between two opposing forces. In respect of digital wellbeing, this metaphor manifested as the yin and yang of digital technologies.

1.3 Digital Wellbeing in the Higher Education Workplace

Within the higher education sector, the topic of digital wellbeing has gained traction over the last number of years, with digital wellbeing now incorporated into digital competency and capability frameworks (JISC, 2019a; Biggins & Holley, 2020). In the Irish context, the digital wellbeing of staff is identified as an important policy area to be addressed at strategic level (National Forum for Teaching and Learning, 2021). This focus on digital wellbeing stems from an increasingly pervasive use of digital technologies in higher education, which is reflected within local, National and European Higher Education policy. The recently published Irish National Digital Experience (INDEx) survey (National Forum for Teaching & Learning, 2020) specifically explores issues relating to digital wellbeing. More broadly, the National Forum for Teaching and Learning positions teaching and learning in a digital age as a key priority, aiming to support: “those who learn, teach and lead in higher education to critically apply digital technologies with the goal of enhancing learning, teaching and overall digital capability” (National Forum for Teaching and Learning, 2021; no page number). The Irish Universities Association’s (IUA) Charter for Irish Universities states that: “If Ireland wants to compete with the best in Europe, there is a need for a coherent, sector-wide programme to drive digital transformation in teaching and learning methods and processes across all related University activities" (IUA, 2020; p.25). In 2019, the IUA launched a three-year project, Enhancing Digital Teaching and Learning (EDTL) with the aim of supporting university lecturers to develop their own digital competences so that the students’ learning experiences can in turn be enhanced with digital technologies. At European level the recently published European Union Digital Education Action Plan 2021-2027 calls for action on two fronts in relation to digital technologies in education. First, to learn from the COVID-19 crisis when technology was used at an unprecedented scale in education, and second, to make education and training

systems fit for purpose in the digital age. Given the commitment at local, national and European level to continue integrating digital technologies for teaching and learning, it is clear that digital technologies will become even more pervasive in higher education.

The commitment at National and European level to the ongoing integration of digital technologies in higher education reinforces the need to address digital wellbeing for those who work and study in this sector in the coming years. The likelihood of increased remote and hybrid teaching in the future places more emphasis and urgency on developing such skills. Furthermore, Higher Education Institutions (HEIs) are both places of work and places of learning and thus have a dual responsibility in relation to digital wellbeing, for both staff and students (JISC, 2019a).

1.4 Research Focus & Questions

The overall goal of this study was to better understand digital wellbeing, and how to support staff in a higher education context to manage their digital wellbeing. This study emerged from the researcher's concern about the potentially negative impact of the growing use of digital technologies on staff wellbeing in the context of higher education. The literature review revealed a lack of published work in relation to digital wellbeing of staff in higher education, and a dearth of research relating to the impact of digital wellbeing interventions on behaviour change (Themelis & Sime, 2019). Furthermore, the review revealed a lack of research on staff in non-teaching roles in higher education and suggested a need to explore the potential positive impact of digital technologies on workplace wellbeing in the education sector (Passey, 2020). These gaps in the literature influenced the researcher in both the design and delivery of the digital wellbeing intervention at the heart of this study, and the approach to evaluating the impact of the intervention. First, the intervention was designed to include staff in all roles in higher education (teaching and non-teaching roles). Second, the intervention was designed to support staff to manage both the challenges presented by digital technologies to workplace wellbeing and the positive potential of digital technologies in respect of workplace wellbeing. Finally, the evaluation methodology was designed to explore the impact of the intervention on behaviour change.

Three research questions were formulated to guide the study:

1. Can/how can a digital wellbeing intervention support staff to manage the challenges presented by digital technologies in the specific context of higher education?
2. Can/how can a digital wellbeing intervention support staff to understand the positive potential of digital technologies in the specific context of higher education?
3. Can/how can a digital wellbeing intervention impact workplace wellbeing in the specific context of higher education?

1.5 Significance of the Study

The digital wellbeing literature has continued to emerge over the course of this study. Theories of digital wellbeing have been advanced (Dennis, 2021; Vanden Abeele, 2020) and new models and frameworks have been presented (Büchi, 2021; Vanden Abbele, 2020). A distinct field of research focusing on digital wellbeing as it relates to mobile connectivity is also evolving (Karsay & Vandenbosch, 2021; Vanden Abeele & Nguyen, 2022). The contribution of this study to this growing body of digital wellbeing literature can be summarised as follows.

First, the study builds on existing models of wellbeing (Dodge, 2016), workplace wellbeing (Demetouri *et al.*, 2001) and digital wellbeing (JISC, 2019a) and technology in the workplace (Orlikowski, 1992) to present a model of digital wellbeing in the workplace. The study provides evidence of the value of this model in respect of supporting staff digital wellbeing in the specific workplace context of higher education.

Second, the study provides evidence of the impact of a digital intervention beyond raising awareness of digital wellbeing to examine the impact on attitudes and behaviours, addressing gaps identified in the literature (Themlis & Sime, 2019).

Third, the research builds on existing work on digital wellbeing in educational contexts (Beetham, 2015; JISC, 2019a; Biggins & Holley, 2020) by offering an analysis of the contextual factors influencing the impact of digital wellbeing interventions particular to a higher education context.

Fourth, as the research study was conducted during the Covid-19 pandemic, the study offers insight into digital wellbeing and workplace wellbeing gleaned from this particular period. The findings offer insights into the challenges of remote working on workplace wellbeing and the challenges of returning to campus post-pandemic. In particular, the findings suggest that traditional views about remote working and reduced productivity have been debunked during the enforced remote working period, paving the way for creating more autonomy for those in non-teaching roles.

Fifth, the study builds on previous work in the education sector on the digital wellbeing of students and those in teaching roles (Biggins & Holley, 2020; Gui *et al.,* 2018; Passey, 2021) by offering insights from staff working in a range of roles across the university.

Sixth, the research offers an insight into staff perceptions of the positive potential of digital technologies in terms of achieving workplace goals, and the impact of a digital wellbeing intervention in supporting staff to understand the potential of digital technologies, an area previously highlighted as requiring further research (Passey, 2021).

Finally, the digital wellbeing intervention materials have been made available online for interested parties through creative commons licensing on a wordpress site.

1.6 Structure of the Thesis

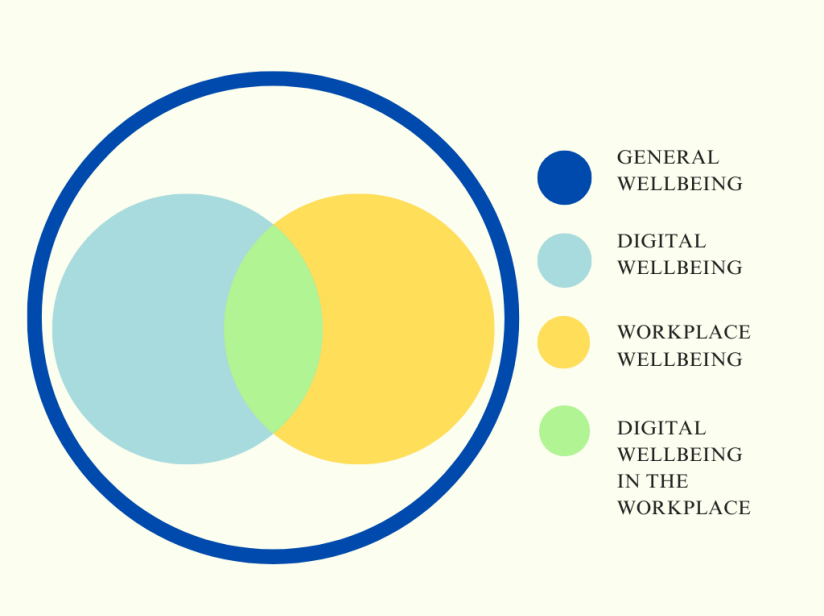
Chapter one has provided an introductory outline of the study including the background and context and the rationale for pursuing research on digital wellbeing. Chapter two presents the literature review strategy and the findings of the review of the research on digital wellbeing and concepts relevant to this study: wellbeing; workplace wellbeing and digital wellbeing in the workplace. Chapter three outlines the process for designing the digital wellbeing intervention. Chapter four explores the methodological approach and the research design, drawing on Saunders, Lewis & Thornhill's (2007) Research Onion Framework. The research design is described in detail using the Research Onion (ibid.) to structure the discussion. Chapter five presents the findings from the case study and chapter six discusses these findings, the contribution and the limitations of the study, and offers recommendations for future practice and research. The thesis concludes with a personal reflection by the researcher.

Chapter 2 Literature Review

2.1 Introduction

Grant & Booth (2009) suggest that the purpose of a literature review is "to identify what has been accomplished previously, allowing for consolidation, for building on previous work, for summation, for avoiding duplication and for identifying omissions or gaps" (p. 97). As digital wellbeing is an emerging phenomenon, a limited body of work specific to this term was available at the commencement of this study (Thelmis & Sime, 2019; Vanden Abeele, 2020). Therefore, a conceptual framework was constructed to guide the literature review. This conceptual framework allowed the researcher to draw on a wider body of work on concepts related to digital wellbeing in the context of the study, namely wellbeing and workplace wellbeing.

Figure 2.1: Conceptual framework guiding literature review



The conceptual framework also facilitates the inclusion of the interpretive voice of the researcher (Booth, Papaioannou & Sutton 2012). The researcher's interpretive voice framed the review around four broad areas of literature: general wellbeing; workplace wellbeing; digital wellbeing; and digital wellbeing in the workplace. As this study focuses on the impact of the design and delivery of a digital wellbeing intervention, there was a specific focus on interventions within each area of the literature. The theoretical

background of digital wellbeing in the workplace was established by exploring the connections between these separate bodies of research. Drawing connections between the areas of literature allowed the researcher to draw on theories and models established in the general wellbeing and workplace wellbeing literature as well as the more limited work on digital wellbeing and digital wellbeing in the workplace.

2.1.1 Questions guiding the review

With reference to the conceptual framework the following questions guided the review process.

1. What is the theoretical background of digital wellbeing in the workplace? How are the phenomena of general wellbeing; workplace wellbeing; digital wellbeing and digital wellbeing in the workplace connected?
2. What are the gaps in the literature in relation to digital wellbeing in the higher education workplace and how can this study address those gaps?
3. Drawing on the literature, how can digital wellbeing be defined and modelled for the purposes of this study?
4. How can the literature inform the design and delivery of a digital wellbeing intervention for staff in a higher education context?

2.1.2 Review strategy

A semi-systematic approach was used to search the literature, to minimise bias and provide a variety of perspectives from a range of disciplines and contexts (Cornish, 2015). The initial search terms were drawn from the conceptual framework wellbeing; workplace wellbeing; digital wellbeing; and digital wellbeing in the workplace. As this study focuses on the potential of an intervention to impact digital wellbeing, the literature on interventions in each area was specifically explored. Two of the most comprehensive multidisciplinary databases were selected for initial searches SCOPUS; and Academic Search Complete. Multidisciplinary databases were considered most appropriate as the literature on wellbeing and digital wellbeing relates to several disciplines including philosophy; psychology; sociology; technology; human-computer interaction; communications studies; media studies; education; and public policy.

A slightly different search strategy was applied for each of the four areas of literature. As there is extensive literature on ‘general wellbeing’, the initial search strategy focused on scoping and literature reviews to get a sense of the breadth of available literature. A similar strategy was adopted for the initial searches on ‘workplace wellbeing’, as the literature in this area is also long established. For ‘digital wellbeing’ and ‘digital wellbeing in the workplace’, a smaller body of literature was available and therefore all available literature was reviewed.

For all of four areas of literature filtering was applied to include English language articles only. Abstracts were reviewed based on specific inclusion criteria for each area of literature as outlined (Appendix A). Papers were selected for review based on their relevance to the questions devised to guide the literature review. This initial literature search uncovered a secondary list of search terms to guide the next stage of the literature review, also detailed in Appendix A. In addition to database searches, conversations with colleagues in the fields of organisational psychology, wellbeing and digital competencies, resulted in the inclusion of further literature for review. Colleagues who were aware of this research study also generously shared literature related to wellbeing, workplace wellbeing, digital wellbeing and digital wellbeing in the workplace over the course of the research on an ad hoc basis. Additionally, sources were acquired through reference sections of relevant articles, referred to as ‘snowball’ technique (Wohlin, 2014).

The literature review process began before the Covid-19 crisis and the resulting wide-scale pivot to remote working which generated an increased interest in, and research on, the topic of digital wellbeing in the workplace. It was therefore necessary to revisit the literature review to include newly emerging work at intervals throughout the research process. The findings of the literature review are presented below in four separate sections using the headings: definitions and models; current research trends; and interventions.

2.2 General Wellbeing

2.2.1 Definitions and models of general wellbeing

While the discourse on general wellbeing stretches across the globe and into ancient history, the roots of contemporary understandings of general wellbeing in the literature lie

with the philosophers of Ancient Greece. Two distinct approaches to general wellbeing emerged from this period: 'hedonic' and 'eudaimonic' (Stoll, 2014). A hedonic approach considered wellbeing as the realisation of as many moments of pleasure as possible (Irwin, 1991). An eudaimonic approach framed wellbeing as the pursuit of virtue, purpose and the realisation of human potential (Stoll, 2014). Hedonic and eudaimonic understandings of wellbeing continue to influence current research and discourse on general wellbeing (ibid.). Given the breadth of research relating to wellbeing, it is unsurprising that defining wellbeing is acknowledged as a complex task (Jackson, 2013; Dodge *et al.,* 2012). It is argued that existing definitions of general wellbeing articulate descriptions of the state of wellbeing or the conditions for wellbeing rather than presenting clear definitions of the term (Jackson, 2013). It is beyond the scope of this literature review to offer a comprehensive analysis of the extensive literature on general wellbeing. However, to lay the foundations for drawing connections between definitions of general wellbeing and definitions of digital wellbeing, workplace wellbeing and digital wellbeing in the workplace, it is useful to explore a selection of definitions from the general wellbeing literature.

Socrates (BC470-BC399) and Aristotle (BC384-BC322) approached wellbeing from an eudaimonic perspective. Socrates, in work captured by Plato, (Stoll, 2014) suggested that wellbeing is a state achieved by valuing the beauty of the mind above physical comfort through lifelong learning and self discovery. Similarly, Aristotle offers a definition of wellbeing as 'well living and well acting' and suggests that the pursuit of wellbeing is a lifelong process. Aristotle identifies three sets of conditions or 'goods' necessary for the achievement of eudaimonic wellbeing: goods of the soul which include moral and intellectual virtue; goods of the body which include strength, health and beauty; and external goods which include wealth, friends, reputation and good birth (ibid.). In psychology, an eudaimonic approach defines wellbeing in terms of self-actualisation and flourishing (Ryan & Deci, 2001), and is often linked to the term 'psychological wellbeing'.

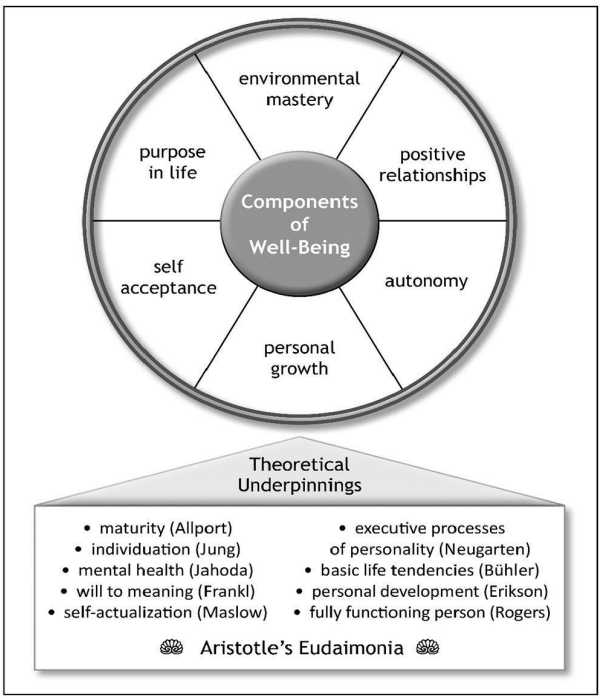
Aristippus (BC435-BC356) rejected Aristotle's eudaimonic approach to wellbeing, instead embracing a hedonic understanding of wellbeing as the realisation of as many moments of pleasure as possible (Stoll, 2014; Irwin,1991). Epicurus (BC341-BC270) also aligned to the hedonic approach to wellbeing, but was more concerned with the absence of pain and mental health issues than the pursuit of pleasure (Stoll, 2014). While Aristotle and

Socrates framed wellbeing as a pursuit of the elite classes, Epicurus took a more inclusive and empowering perspective than his predecessors and suggested that wellbeing was achievable by all. In psychology, the term 'subjective wellbeing' is often linked directly to the term hedonic wellbeing. Kahneman, Diener & Schwartz (1999) initially focused largely on the hedonic aspect of wellbeing defining wellbeing as: "concerned with feelings of pleasure and pain, of interest and boredom, of joy and sorrow, and of satisfaction and dissatisfaction" (p. ix).

While early philosophers followed either a hedonic or eudaimonic path towards wellbeing, the field of psychology often draws these approaches together. While Kaheman initially focused on hedonic interpretations of wellbeing as mentioned above, he later extended his definition of wellbeing to include life goals (Kahneman, Diener & Schwartz 1999), a dimension of wellbeing reflecting an eudaimonic understanding of wellbeing. Keyes (2002) draws on both eudaimonic and hedonic wellbeing dimensions to propose a definition of wellbeing as a "syndrome of symptoms or positive feelings and positive functioning in life" (Keyes, 2002; p. 208). Similar to Socrates' work in the field of philosophy, Keyes' (ibid.) work focuses on the conditions for wellbeing rather than offering a clear definition. Diener & Suh (1997) follow a similar path, describing wellbeing as a set of conditions which draws from both the eudaimonic and hedonic traditions including: life satisfaction (eudaimonic); pleasant affect and unpleasant affect (hedonic) and broader social indicators (eudaimonic and hedonic).

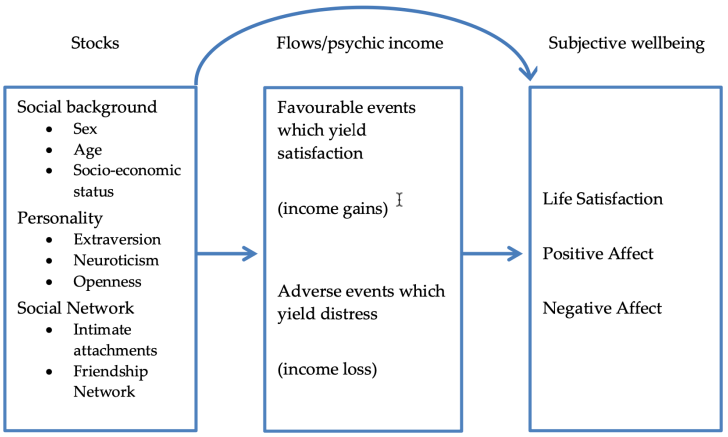
The psychology literature moves beyond definitions to present theories and models of general wellbeing. Ryff's (1995) model identifies six aspects of wellbeing that echo a eudaimonic approach to wellbeing: self-acceptance; positive relations with other people; autonomy; environmental mastery; purpose in life and personal growth. While a range of theories inform this model, Aristotle's understanding of eudaimonic is highlighted as an influence (figure 2.2).

Figure 2.2 Model of Wellbeing (Ryff, 1995)



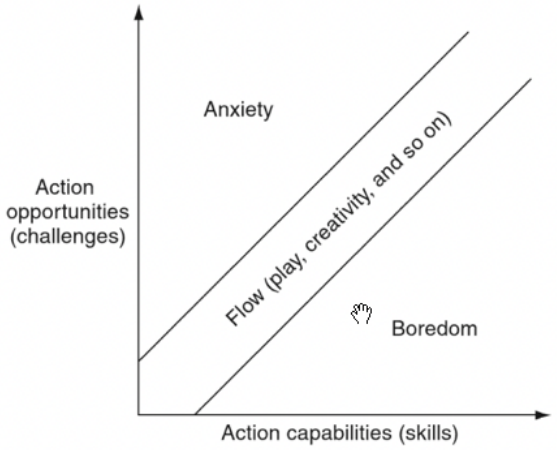
Headey & Wearing (1989) propose a dynamic model of wellbeing, where wellbeing is understood as a relatively stable point, influenced by significant challenges and positive experiences. A stocks and flows framework describes how an individual draws on 'stocks' (positive personal characteristics) to deal with the 'flows' (challenges of life). Extensively researched in the 1990s and 2000s, this model was initially found to be valid across a wide range of contexts (figure 2.3). Later, a wide-scale study (Wagner, G. G., Frick, J. R. & Schupp, 2007) revealed flaws in the model that led to a revised model which accommodates the movement to a new set point of equilibrium on a subjective wellbeing scale (Headey, 2006).

Figure 2.3 Stocks and Flows Framework (Headey & Wearing, 1989: p. 56)



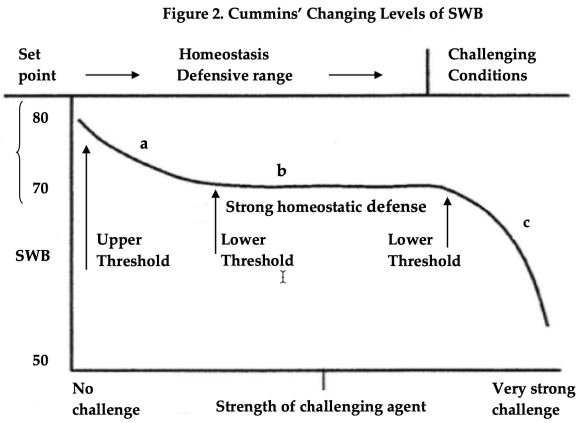
Csikszentmihalyi's (2000) flow theory is based on research on the happiness of specific groups such as artists and rock climbers. Wellbeing is "characterized by complete absorption in what one does" (p. 195). The resulting model (figure 2.4) represents the state of flow achieved when the perceived opportunities for action are in balance with the actor's perceived skills.

Figure 2.4 Flow Theory (Csikszentmihalyi, 2000)



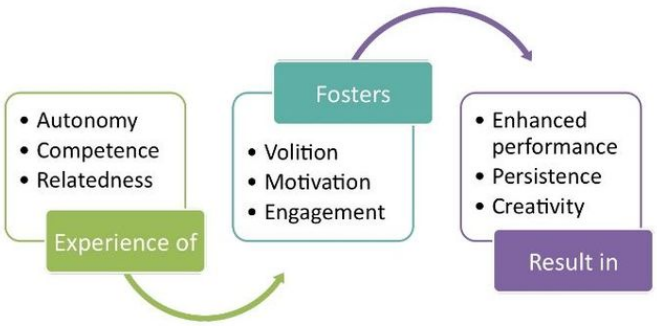
Cummins' (2016) homeostasis theory of subjective wellbeing presents wellbeing as influenced by autonomic neurological processes similar to body temperature control. The homeostasis model proposes that individuals have a 'set point' of subjective wellbeing, and only small variances from this set point are experienced due to extrinsic and/or intrinsic challenges (figure 2.5). This model builds on Heading & Wearing's (1991) work by acknowledging the varying impact on this set point of subjective wellbeing, based on the strength of the challenge, and the individuals' capability to defend against these challenges.

Figure 2.5 Homeostasis Theory of Subjective Wellbeing (Cummins, 2016)



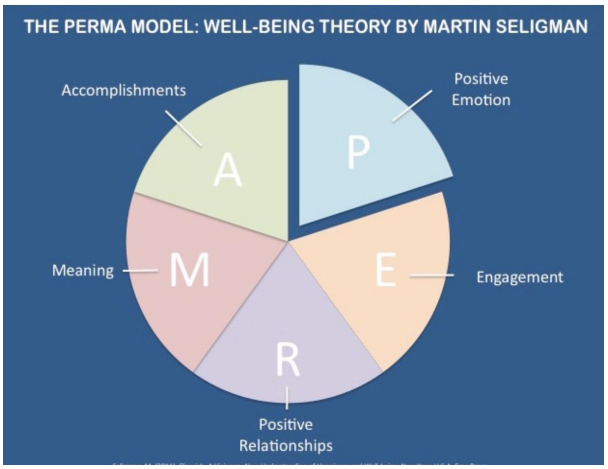
Ryan & Deci's (2000) Self-Determination Theory (SDT) is a widely used and researched model of wellbeing. The model presents three conditions for wellbeing: autonomy, competence and relatedness, which are described as "essential for facilitating optimal functioning of the natural propensities for growth and integration, as well as for constructive social development and personal well-being" (p. 68). The conditions presented here overlap with three of Ryff's (1995) aspects of wellbeing. The concept of autonomy is used in both models. The term 'environmental mastery' used by Ryff can be equated with Ryan & Deci's term 'competence', and the 'positive relationships' used by Ryff is mirrored in the SDT model's term 'relatedness'. However, the SDT model presents three requirements for wellbeing as influencing the state of wellbeing. The state of wellbeing or results of having the three conditions is described as motivation, engagement, enhanced performance, creativity - all of which can be described as eudaimonic dimensions of wellbeing.

Figure 2.6 Self-determination Theory (Ryan & Deci, 2000)



Seligman's (2011) PERMA model, developed under the umbrella of the positive psychology movement, is also a particular influential model of wellbeing in recent literature (Donaldson, Dowlett & Rao, 2015). The term 'positive psychology' was first mooted by Maslow in 1954, (Dodge, 2016). However Seligman (2011) is largely credited with establishing "the scientific study of positive human functioning and flourishing on multiple levels that include the biological, personal, relational, institutional, cultural, and global dimensions of life" (ibid. p. 200). The PERMA model presents a set of dimensions necessary for wellbeing including both eudaimonic and hedonic aspects: positive emotions; engagement; positive relationships; meaning; and accomplishments (figure 2.7). Seligman (ibid.) prefaces his work on the PERMA model by offering a very simple definition of wellbeing as 'a life worth living" and clarifies his analysis by suggesting that 'no one element defines well-being, but each contributes to it." (Seligman, 2011; p.7). The PERMA model has been extensively researched (Donaldson, Dowlett & Rao, 2015) and widely used to support employees in the world of business and more recently, students and staff in education (Calvo & Peters, 2014; Donaldson, Dowlett & Rao, 2015). Despite this wide scale adoption, positive psychology has also been criticised as an individualistic approach which overlooks broader contextual factors influencing wellbeing (Wright & Pascoe, 2015). Seligman is also criticised for avoiding a clear definition of wellbeing by focusing on the factors contributing to wellbeing (Dodge *et al.*, 2012; Ryff, 2022). Furthermore, concerns have been raised in the field of psychology regarding elitism and cronyism within the positive psychology movement (Held, 2004; Wong & Roy, 2018), and the over-commercialisation of the PERMA model (Ryff, 2022). Ryff (2022) acknowledges the value of a positive approach to wellbeing while suggesting that a positive approach to psychology "has legs which stretch back into the distant history of the discipline" (Ryff, 2003, p. 157), rather than originating with the positive psychology movement created by Seligman and Czikszentmihalyi (200). A recent second wave of positive psychology 'PP2.0' is touted as potentially addressing these criticisms (Wong & Roy, 2018, Ryff, 2022).

Figure 2.7 Seligman's (2011) PERMA model of Wellbeing



Having conducted a multidisciplinary review of wellbeing definitions and models, Dodge *et al.* (2012) proposed a definition of wellbeing as the balance point between an individual's resource pool and the challenges faced (figure 2.9). This definition and model draws on the extensively researched work of Headey & Wearing (1989), Csikzentmihaylyi's (2000) flow theory and Cummins (2016) theory of wellbeing as homeostasis.

Figure 2.8 A model of Wellbeing (Dodge et al 2012)

This model is yet to be adopted widely in studies of wellbeing but initial research drawing on the model to examine student wellbeing in the further education context offers evidence of the value of this model in practice (Dodge, 2016). Despite stating an intention to address previous failed attempts to define as well as describe wellbeing, Dodge's work has also been criticised for not offering a clear definition of wellbeing (Jackson, 2013). Notwithstanding the limitations outlined above, Dodge's (2016) model distils a range of complex evidence based models of wellbeing into a more simple and easy to comprehend model.

2.2.2 Current trends in wellbeing research

A comprehensive analysis of the current trends in the general wellbeing research is beyond the scope of this literature review. The initial literature searches for this study (Appendix B) offers a sense of the range and expanse of the wellbeing research, and identifies some recent trends with relevance to this study such as: student wellbeing in higher education; academic wellbeing; and the measurement of wellbeing. As it relates to the specific context of digital wellbeing in the higher education workplace, the literature on academic wellbeing is discussed with in the section that follows on digital wellbeing in the workplace (Section 2.3). The literature relating to measuring wellbeing is discussed in chapter 4 which addresses the methodology for the study.

2.2.3 General wellbeing interventions

Positive psychology interventions have dominated the general wellbeing literature for some time with evaluations generally reporting a positive impact on wellbeing (Donaldson, Dowlett & Rao, 2015). The reported positive impact includes: increased positive emotions; reduced stress; enhanced attention; increased resilience; emotional intelligence; improved relationships; and improved self esteem (Donaldson, Dowlett & Rao, 2015; Svane et al, 2019). While an extensive body of work is available in relation to positive psychology interventions (Donaldson, Dowlett & Rao, 2015), concern has been raised regarding the methodology and rigour of these evaluations (Kern *et al.,* 2020; Ryff, 2022; van Zyl & Ten Klooster, 2022). Ryff (2022) suggests that much research on positive psychology interventions is limited due to the lack of independent research, which protects the lucrative commercial side of the positive psychology movement and related interventions. Van Zyl & Ten Klooster (2022) question the validation process of the widely used Positive Psychology Assessment Measures (PPAMs), suggesting that the inconsistency evident between evaluations demonstrates the flaws in these measurement instruments. The lack of a clear definition of the dimensions of the PERMA model is described as underpinning the flaws in the PPAMs (ibid.). Furthermore, the research published to date is criticised for focusing mainly on privileged research participants thus skewing the findings in respect of generalising for the broader population (Ryff, 2022; Van Zyl & Ten Klooster, 2022).

Criticism levelled specifically at positive psychology interventions is echoed in the literature on general wellbeing interventions more broadly. The focus on specific

population groups is identified as problematic in terms of applying findings to the general population (Eby *et al.*, 2019; Svane *et al.,* 2019). The lack of a shared understanding of the term 'wellbeing' has been referenced in several analyses of wellbeing intervention research (Svane *et al.,* 2019). Furthermore, the extensive range of wellbeing interventions emerging in the research is described as an indication of the lack of maturation of research on wellbeing interventions (Svane *et al.,* 2019).

2.3 Workplace Wellbeing

While the term 'workplace wellbeing' is a more recently emerging phrase, the discourse relating to health in the workplace emerged during the industrial revolution of the 1800s. At that time, the impact of physical working conditions on physical health was the key challenge to workplace wellbeing. The focus on physical wellbeing at work continued throughout the 20th century and remains a focus for organisations today. This focus on the physical aspect of workplace wellbeing continued throughout the 20th century to the present day through legislative measures, and through human rights endeavours in less developed countries. Concerns regarding physical health in the workplace is a particular focus in developing countries where human rights organisations continue to advance legislation for workers. While a broader understanding of workplace wellbeing has long been discussed in organisational psychology (Bryan & Vinchur, 2012) it was not until the World Health Organisation's (1994) 'Declaration of Occupational Health for All', that the importance of wellbeing beyond physical wellbeing was widely recognised in the workplace. Since then, a growing focus on mental and emotional wellbeing is evident in the literature (Paterson, Leduc & Maxwell, 2021).

2.3.1 Definitions and models of workplace wellbeing

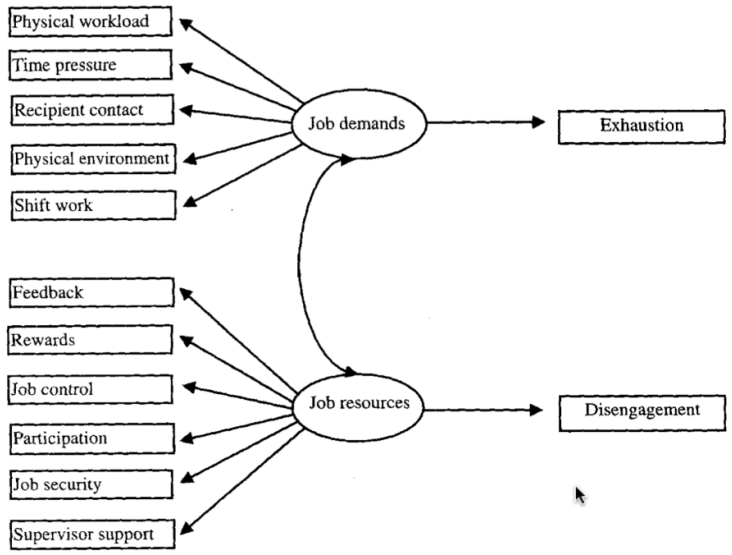
While terms such as 'occupational health' and 'organisational psychology' have long been used in the literature (Bryan & Vinchur, 2012) more recently specific definitions of the term 'workplace wellbeing' have emerged. The International Labour Organisation (2021) describes workplace wellbeing as relating to: "all aspects of working life, from the quality and safety of the physical environment, to how workers feel about their work, their working environment, the climate at work and work organization" (no page number). A link can be drawn between hedonic wellbeing and the physical safety of the work

environment in the sense that hedonic wellbeing focuses on lack of pain/discomfort. An eudaimonic framing of wellbeing is also evident within this definition through the reference to 'how workers feel about the work'. Bartels, Peterson & Reina (2019) offer a specific definition for eudaimonic workplace wellbeing as "an employee's subjective evaluation of his or her ability to develop and optimally function within the workplace (p.3). This definition draws on the eudaimonic understanding of general wellbeing and also on Ryff & Singer's (2008) work which identifies the specific social context as a key factor influencing wellbeing, in this case the workplace.

In contrast, the concepts of 'job satisfaction' and 'job engagement' have been prominent in the organisational psychology literature for several decades'. Warr & Inceoglu (2012) offer a useful interpretation of the differences between these terms. 'Job satisfaction' is described as focusing on the pursuit of pleasure and avoidance of pain, reflecting the hedonic approach defined in the general wellbeing literature. 'Job engagement' is described as encompassing the pursuit of "objectives that are in some sense seen as worthwhile" (ibid, p. 130) aligning more closely with the eudaimonic definitions of general wellbeing.

Several models have been used to research workplace wellbeing. Ryan & Deci's (2001) Self-determination Theory (SDT) has been widely used in the organisational psychology literature across a range of contexts including health and education (figure 2.6; p. 28). SDT has been described as providing a framework for examining motivation in the workplace from both employee and employer perspective considering both "wellness and high-quality performance" (Deci, Olafsen & Ryan, 2017: p. 19). The Job Demands-Resource Model of Burnout (Demerouti *et al.,* 2001) considers all job interactions as either a job demand or a job resource (figure 2.10). Job demands are "those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs (e.g., exhaustion)", (p. 501) and job resources are those aspects of the job that support the achievement of goals, reduce job demands and/or stimulate personal growth and development (figure 2.9). A significant body of work has emerged that draws upon this model (Bakker & Demerouti, 2017) including work relating specifically to digital wellbeing in the workplace which is discussed in more detail in section 2.5.2 below.

Figure 2.9 Job Demands-Resource Model of Burnout (Demerouti et al., 2001)



Warr's (2009) Vitamin Model proposes twelve requirements necessary for employee happiness at work (figure 2.11). This model includes three factors that reflect those articulated in the SDT model: opportunity for self-control (autonomy in SDT); skills acquisition and use (mastery in SDT), and contact with others (relatedness in SDT). However, the Vitamin Model includes a range of factors specific to the workplace which reflect both hedonic wellbeing (physical security, availability of money), and eudaimonic dimensions of wellbeing (valued social position, career outlook). The Vitamin analogy is used to emphasise that some of these twelve factors only influence happiness at work to the point where 'deficiencies' are addressed.

Figure 2.10 Vitamin Model of Workplace Wellbeing (Warr, 2009)

Principal Environmental Characteristics Affecting Happiness or Unhappiness, with Investigated Themes in Job Settings

Environmental feature	Investigated components in paid work
E1. Opportunity for personal control	Personal influence, autonomy, discretion, decision latitude, participation
E2. Opportunity for skill use and acquisition	A setting's potential for applying and developing expertise and knowledge
E3. Externally-generated goals	External demands, challenge, workload, underload and overload, competition from others, task identity, role conflict, work-home conflict, required emotional labor
E4. Variety	Variability in task content and social contact, varied work location
E5. Environmental clarity	Predictable outcomes of action, clear requirements, role clarity, task feedback, low future ambiguity
E6. Contact with others	Quality of social interaction and relationships, quantity of social contact, interdependence with others, team working
E7. Availability of money	Available income, pay level, payment for results
E8. Physical security	Working conditions, degree of hazard, quality of equipment
E9. Valued social position	Significance of a task or role, position in valued groups, contribution to society
E10. Supportive supervision	Sympathetic consideration by bosses, fair treatment by supervisor, concern for one's welfare, effective supervisory behavior
E11. Career outlook	Job security, the opportunity to gain promotion or shift to other roles
E12. Equity	Justice within one's organization, fairness in the organization's relations with society

2.3.2 Current research trends

Six separate but connected issues dominate recent literature on workplace wellbeing: organisational culture and structures; work overload; job insecurity; work-home boundaries; technology integration; and remote working (Bragard *et al.,* 2015). The following sections offer a brief overview of these trends.

2.3.2.1 Organisational culture

There is a long history of research in the area of organisational psychology examining the impact of organisational culture and structures on employee wellbeing, and this body of work covers an extensive range of issues (The trends emerging in recent literature include: support from supervisors (Brady & Wilson, 2021; Bragard *et al.,* 2015; Lang *et al.,* 2012); social support (Bragard *et al.,* 2015*;* Sonnentag, 2015); the ideal worker norm (Kossek, Perrigino & Rock, 2021; Wilk, 2016) and remote working.

Bragard *et al.* (2015) reported a correlation between supervisor support and workplace wellbeing in healthcare contexts. Brady & Wilson (2021) found that a lack of support from supervisors or managers has a negative influence on workplace wellbeing for teachers. In a review of the literature across a range of workplace settings, Sonnentag (2015) identifies strong social support as a predictor of positive workplace wellbeing. Bragard *et al.* (2015) concur with these findings in their study in the healthcare context. The ideal worker norm has been consistently explored in the literature since it was first defined by Acker (1990) as an organisational norm where the employee is judged by their commitment to the workplace, or the hours they are available to work (Wilk, 2016; Kossek, Perrigino & Rock, 2021). One of the key impacts of the Covid-19 crisis on organisational structure and culture has been the move to large scale remote working, which is discussed in more detail later in this chapter (section 2.3.2.5).

2.3.2.2 Work overload

The impact of work overload on workplace wellbeing is evidenced throughout the literature (Sonnentag, 2015; Attridge, 2019; Hirschle & Gondim, 2020; Brady & Wilson, 2021). Sonnentag (2015) identified an unmanageable workload as a key reason for engaging in negative workplace practices such as presenteeism and/or leavism. Presenteeism involves continuing to work despite illness and leavism involves using time off such as weekends and holidays to catch up on work. The Chartered Institute of Personnel & Development, in a survey of UK human resource professionals reported that eighty-nine percent of participants had observed presenteeism in 2020, with leavism observed by seventy-three percent (Chartered Institute of Personnel & Development 2020), highlighting the extent of this issue. The literature offers evidence of the negative impact of such practices on productivity and performance (Hargrave *et al.,* 2008) and presenteeism and leavism have also been identified as potential indicators of future absenteeism (Skagen & Collins, 2016).

2.3.3.2 Job insecurity

A number of factors have been identified as influencing employee's perceived job insecurity in the literature including: the so-called 'fourth industrial revolution[1]' and subsequent workplace restructuring; recent economic downturns; and the impact of the Covid-19 crisis (World Economic Forum, 2019). In addition to economic influences on job security, many workplaces are undergoing increasingly rapid change. With particular relevance to this study, the higher education sector has been subject to wide ranging changes over the last twenty years including an increased focus on performativity which has been shown to challenge the wellbeing of academics (Franco-Santos & Doherty, 2017). In addition, research specific to academic staff in higher education suggests that job insecurity is a key factor contributing to high stress and burnout for this group (Kenny, 2015; Lawless *et al.,* 2016; Urbina-Garcia, 2020). Furthermore, job insecurity has been shown to result in negative work practices such as presenteeism and blurred work-home boundaries (Chartered Institute of Personnel & Development, 2020).

2.3.2.3 Work-home boundary management

While the blurring of work-home boundaries has long been an issue (Nippert-Eng, 1996), the wide scale integration of technology in the workplace has added to the challenges of creating firm work-home boundaries (Krause, 2018). Technology is described as having 'annihilated space and time as the two basic and inseparable connected dimensions for each social system' (ibid. p. 224). The impact of technology on work-home boundary management is a key trend in recent research on work-home boundaries (Cox *et al.*, 2016; Bordi *et al.*, 2018; Cecchinato, 2018; Potter *et al.,* 2021) with the resulting phenomenon of 'always-on' culture also explored (Tarafdar, Gupta & Turel, 2015; Wilk, 2016). The intersections between technology, work-home boundary management and always-on culture are explored in more depth in the section on digital wellbeing in the workplace (section 2.5).

[1] The Fourth Industrial Revolution is described by the World Economic Forum as heralding a series of social, political, cultural, and economic upheavals that will unfold over the 21st century.

2.3.2.4 Technology integration

The increasing use of technology in the workplace is acknowledged as offering the potential for a positive impact on productivity for the employer and flexibility for the employee (World Economic Forum, 2019), but also presents employers and employees with a new set of challenges. After an initial period where the research on the integration of technology focused significantly on the positive potential of technology on productivity, more recent work examines what is often described as 'the dark side of technology' in the workplace (Tarafdar, Gupta & Turel, 2015). The recent move to remote and hybrid work cultures resulting from the Covid-19 pandemic has expedited this impact (Chartered Institute of Personnel & Development, 2020; McCarthy *et al.,* 2020; 2022). The impact of technology on workplace wellbeing is explored in detail in the section on digital wellbeing in the workplace (section 2.5).

2.3.2.5 Remote working during the Covid-19 pandemic

A growing trend in the literature examining remote working has emerged over the last decade with a raft of work published since the Covid-19 pandemic. Research examining patterns of remote working during the pandemic unsurprisingly demonstrates a marked increase in remote working during that time. A survey of 7,125 workers across a range of sectors in Ireland conducted in June 2020 asked respondents to report their remote working pattern prior to the pandemic and at the time of the study (McCarthy *et al*., 2020). Prior to Covid-19, 51% of respondents had never worked remotely while at the time of the survey, 87% of respondents indicated they were working remotely because of the outbreak of Covid-19 (ibid.).

Work to date exploring the consequences of the increased reliance of digital technologies during the pandemic demonstrates both positive and negative impact on workplace wellbeing (Chartered Institute of Personnel & Development, 2020; McCarthy *et al.,* 2020; 2022; JISC, 2022). Positive impact relates to the flexible nature of remote working and how that flexibility impacts positively on work-life balance (McCarthy *et al.,* 2020; 2022; Syrek, Kühnel, Vahle-Hinz & Bloom, 2021; JISC, 2022). Syrek, Kühnel, Vahle-Hinz & Bloom (2021) found that in the initial stages of the pandemic (March-May 2020) employees experienced a positive impact on work-life balance and workload management due to increased autonomy. However, once the pandemic restrictions began to ease, these

positive impacts were no longer evident. The same study revealed an increase in job satisfaction for respondents during the crisis. The authors suggest that this higher level of job satisfaction may have been a pragmatic reflection on employment status during a time

The particular experience of female employees is a recurring theme in emerging research and discourse on the impact of Covid-19 on remote working (Minello, Martucci & Manzo, 2021; Augustus, 2021; Syrek, Kühnel, Vahle-Hinz & Bloom, 2021; Nash & Churchill, 2023). In a survey of 637 employees in a Dutch multinational conducted at the start of the Covid-19 pandemic (March 2020) female employees experienced a stronger decrease in work-life balance than their male colleagues (Syrek, Kühnel, Vahle-Hinz & Bloom, 2021). However, once the new remote working culture was established in April and May the same year, female employees experienced a higher increase in work–non-work balance than their male colleagues (ibid.). Nash & Churchill (2021) examined the guidance and support provided by forty-nine institutions in Australia and the top ten higher education institutions in the United States and the United Kingdom in relation to the enforced remote working context resulting from the Covid-19 pandemic. The research revealed that the majority of Australian institutions emphasised the additional caring responsibilities borne during this period as a personal matter for staff to negotiate individually, with only one institution explicitly acknowledging the "collective nature of caring responsibilities" (ibid.; p. 840). While institutions in both the United States and the United Kingdom were found to be more supportive of staff in managing the balance between home and work life, the authors argue that the Covid-19 pandemic was another context in which universities "evaded their responsibility to ensure women's full participation in the labour force" (ibid.; p. 835). Augustus (2021) draws on the findings of several research studies emerging from the Covid-19 experience to conclude that the "the reality of working at home has disproportionately impacted women with children" and calls for Higher Education employers to redress this impact by embracing new ways of working that provide the flexibility required by female employees in terms of balancing caring responsibilities with workload (p. 3).

Younger workers were also more likely to be impacted by the pandemic remote working with studies demonstrating a reduced job satisfaction for that cohort (Pieh *et al.*, 2020; Syrek, Kühnel, Vahle-Hinz & Bloom, 2021). One of the potential reasons suggested for the decreased job satisfaction for this group was the impact on the social aspect of work

Akkermans *et al.* (2020). This analysis is supported by research across a broader demographic that demonstrates the sudden move to remote working during the pandemic caused a sense of isolation (Chartered Institute of Personnel & Development, 2020; JISC, 2022).

2.3.3 Workplace wellbeing interventions

Approaches to addressing workplace wellbeing interventions explored in the literature are wide-ranging. While extensive funding is currently invested in workplace wellbeing interventions, there remains a limited peer reviewed literature on their impact (Ivandic *et al.,* 2017*;* Paterson, Leduc & Maxwell, 2021). Ivandic *et al.* (2017) suggest two reasons for this dearth of peer-reviewed literature: the lack of a legal obligation by employers to address mental wellbeing; and the implications of negative findings on the reputation of individual organisations. However, a number of studies and scoping reviews of workplace wellbeing interventions offer insights useful to this study, specifically in relation to intervention design and evaluation methodologies.

2.3.3.1 Intervention design

Ivandic *et al.* (2017), in a systematic review that compared eleven brief mental health and wellbeing interventions in organisational settings to nine of longer duration found that interventions offered over a very short duration were of limited benefit to participants. The review included a range of intervention approaches. No evidence was found for the effectiveness of short duration stress management, massage, mindfulness, meditation or multimodal interventions. Limited evidence of effectiveness was found for brief positive psychology interventions. Overall, the findings of the review suggest that sustained engagement of participants is necessary for meaningful impact of interventions on workplace wellbeing.

There is significant literature available in relation to Employee Assistance Programmes (EAPs), a key approach used in the workplace since the 1950s. EAPs are defined as interventions “to facilitate employee wellbeing by managing their personal work-related issues” (Hsu, Wang & Lan, 2020; p. 935). Introduced initially in the United States, early EAPs focused on addressing issues such as alcoholism and mental health issues based on the assumption that dealing with employee wellbeing issues would improve productivity.

Over time, EAPs have expanded to include: workplace coaching and mentoring; short term counselling; and critical incident counselling (Joseph, Walker & Fuller-Tyszkiewicz, 2018). Studies suggest that EAPs can positively impact workplace wellbeing by improving levels of functioning (ibid.). Furthermore, studies have shown that EAPs can help to prevent the emergence of challenges to workplace productivity such as absenteeism (Nunes, Richmond, Pampel & Wood, 2018) and presenteeism (Hargrave *et al.,* 2008). However, a low uptake of EAPs has long been a concern (Attridge, 2019) The reasons for the longstanding low level of engagement suggested in the literature include: a lack of awareness of available programmes; lack of integration of EAPs in organisational culture; and a mistrust of EAPs stemming from their original purpose of addressing sensitive personal wellbeing issues such as alcoholism and addiction (ibid.). While the historical mistrust of EAPs would not apply to workplace wellbeing interventions more generally, the implications of lack of awareness and lack of integration of interventions offer useful insights for intervention rollouts.

The research relating to workplace wellbeing interventions in educational settings offer particular insight for this study. Brady & Wilson (2021) in exploring school level wellbeing interventions for second level teachers in the UK, suggest that the most effective interventions were those that addressed underlying causes of stress in the workplace such as workload. The least effective approaches were mandatory interventions deployed after normal work hours which were perceived as simply adding to already long working hours. In a study of sixty-seven non-teaching staff in a higher education setting, Kaplan *et al.* (2017) explored the impact of two wellbeing interventions in respect of four factors: positive affective wellbeing; self-reported gratitude; negative affective wellbeing and self-reported social connectedness. Participants were asked to engage with one of two interventions three times per week for a period of two weeks. The first intervention focused on self-reported gratitude, the second on social connectedness or a sense of belonging within the workplace. The gratitude intervention was found to impact positively on the positive affective wellbeing and the self-reported gratitude of participants. However, the intervention did not have any impact on the negative affective wellbeing or the social connectedness of participants. The social connectedness intervention had no impact on any of the four factors. The findings were inconclusive in respect of the ideal mechanism for enhancing workplace wellbeing and highlights the need for further work.

2.3.3.2 Evaluation methodologies

Concern is raised in the literature in relation to the methodologies used to evaluate workplace wellbeing interventions, similar to concern raised in the literature on general wellbeing interventions. Ivandic *et al.* (2017) suggest that of twenty intervention evaluations reviewed, seventeen studies did not have a sufficiently clear outline of the methodology and that the majority of studies had a high risk of bias. The authors call for "further, high-quality research with well-reported methodology to avoid potential bias and provide transparent evidence on the effectiveness of these interventions" (ibid. p. 105). The rigour of EAP evaluation processes is also called into question with many studies conducted by service providers who cannot therefore be viewed as independent researchers (Joseph, Walker & Fuller-Tyszkiewicz, 2018). The lack of a valid and reliable evaluation instrument also challenges the evaluation process. Instruments used to evaluate EAPs have been described as very narrow, often omitting key variables such as wellbeing, health and productivity (ibid., 2018).

Again, the research specific to educational contexts is of particular interest. Hwang *et al.* (2017) in a scoping review of the literature on mindfulness training for in-service teachers, found that all articles reviewed reported some level of impact on the wellbeing of participants including: reduced burnout; decrease in physiological impact of stress; and improved performance levels. Slemp, Kern & Vella-Brodrick (2019) in their review of 119 articles on 'contemplative workplace interventions', including mindfulness, conclude that a small to moderate improvement in work related distress for employees is evident across the studies reviewed. However, similar to general wellbeing interventions, the rigour of evaluation processes is questioned with a high risk of publication bias leading to inflated results (ibid.). Fernandez *et al.* (2016) in a study exploring settings based approaches to supporting mental health and wellbeing in universities reported only four of nineteen studies focused on staff wellbeing. Furthermore, the authors raised concern in relation to the external validity of all four studies.

2.4 Digital Wellbeing

2.4.1 Introduction

Research exploring the impact of digital technologies on wellbeing began to emerge as far back as the 1950s (Calvo & Peters, 2014). Work from the human-computer interaction field initially concentrated on the impact of digital technologies on physical wellbeing, and later focused on the user experience. This early work reflects a hedonic understanding of wellbeing as it focuses on the positive and negative impact of digital technologies. Later work such as Calvo, Peter & Ryan's (2018) METUX (Motivation, Engagement, & Thriving in User Experience) framework, draws on an eudaimonic understanding of wellbeing and presents a structure to guide technology design that encourages flourishing. In the field of psychology, work to date concentrates on the overuse of digital technology and medicalising overuse as addiction. The term 'digital wellbeing' emerged more recently in the literature and discourse, first in the technology sector (Harris, 2012), followed by work in the education sector linked to digital capability/competency frameworks (JISC, 2019a). Subsequently, theoretical work has emerged from the fields of sociology, philosophy and media/cultural students (Gui, Fasoli & Caddore, 2017; Burr & Floridi, 2020; Dennis, 2020; Vanden Abeele, 2020). This work offers a range of definitions and some models, explored below.

2.4.2 Definitions & models of digital wellbeing

The impact (positive and/or negative) of technology on wellbeing is a core tenet of all definitions and models reviewed. The United Kingdom's Joint Information Systems Committee (JISC) initially presented a definition of digital wellbeing based on a consultation process with professional bodies and experts in the United Kingdom education sector in relation to the JISC digital capabilities framework (Beetham, 2015). This definition was revised in 2019 based on further consultation with the sector.

> Digital wellbeing considers the impact of technologies and digital services on people's mental, physical and emotional health (JISC, 2019a).

This definition is expanded through a model of digital wellbeing (figure 2.12) and guidelines for both individual practitioners and institutional leaders (JISC, 2019b, 2019c). The model suggests four aspects of the relationship between digital technologies and

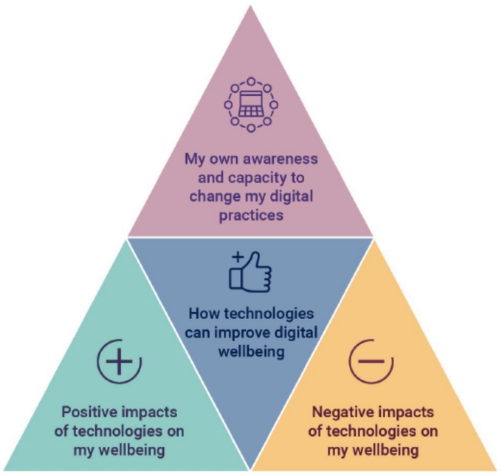
wellbeing; the positive impact of technologies on wellbeing; the negative impact of technologies on wellbeing; individual awareness and capacity to change practice; and how technologies can support digital wellbeing. The accompanying guidelines outline four contexts for considering digital wellbeing: social, personal, work and learning and suggest that:

> People may have more control over their digital wellbeing in personal and social contexts than they do in a learning or a work context, but only if they have the knowledge, capacity and appropriate support to do so (JISC, 2019b, p.5).

The briefing paper for senior leaders emphasises that universities have responsibilities to both staff and students in relation to digital wellbeing given their status as places of employment and learning.

> Staff need to be able to take advantage of technology to carry out their job roles without compromising their physical and mental health and students need to be able to study effectively and experience a positive learning experience. (JISC, 2019c; p. 5).

Figure 2.11 JISC Model of Digital Wellbeing for Individuals



Gui, Fasoli & Carridore (2017) describe digital wellbeing as influenced by individual digital wellbeing skills, and the social context of the individual's experience. Digital well-being skills are defined as a set of attentional and strategic skills required to address the challenges presented by digital communication overload. The authors suggest that the impact of digital technologies on wellbeing should be considered from both a hedonic and an eudaimonic perspective. Drawing individual digital wellbeing skills and the social dimension together they define digital wellbeing as:

> As a state obtainable not only by the individual through his/her personal "digital wellbeing skills", but also as a characteristic of a community whose norms, values and expectations contribute to its members' comfort, safety, satisfaction and fulfilment (ibid.; p. 155)

Burr & Floridi (2020) propose that a loose definition of digital wellbeing best serves the emerging multidisciplinary body of work. Their loose definition reflects Seligman's (2011) definition of general wellbeing as a "life worth living" (p. 7).

> For present purposes, 'digital well-being' can be treated as referring loosely to the project of studying the impact that digital technologies, such as social media, smartphones, and AI, have had on our well-being and our self-understanding of what it means to live a life that is good for us in an increasingly digital society (Burr & Floridi, 2020: p.3).

Dennis (2021) criticises the current approach embraced by corporations and non-government organisations such as Google and the Centre for Humane Technologies (Centre for Humane Technology, 2020; Google, 2020b), which he describes as the 'McDonald's model' of digital wellbeing. The moniker 'McDonald's model' is used to illustrate the similarities between the McDonald's fast food company and technology companies in respect of consumer responsibility. The 'McDonald's Model' of digital wellbeing absolves technology companies of any responsibility towards user behaviour, and downplays the addictiveness of digital technologies. Such an approach reflects the McDonald's food chain's long running marketing strategy that suggests fast food can be a part of a balanced diet if consumers take responsibility for their eating habits. Dennis draws on Burr & Floridi's definition of digital wellbeing and lays the foundations for an alternative approach to the McDonald's model of digital wellbeing beyond personal responsibility, self regulation and corporate absolution, towards a shared responsibility between the technology designer and the individual consumer.

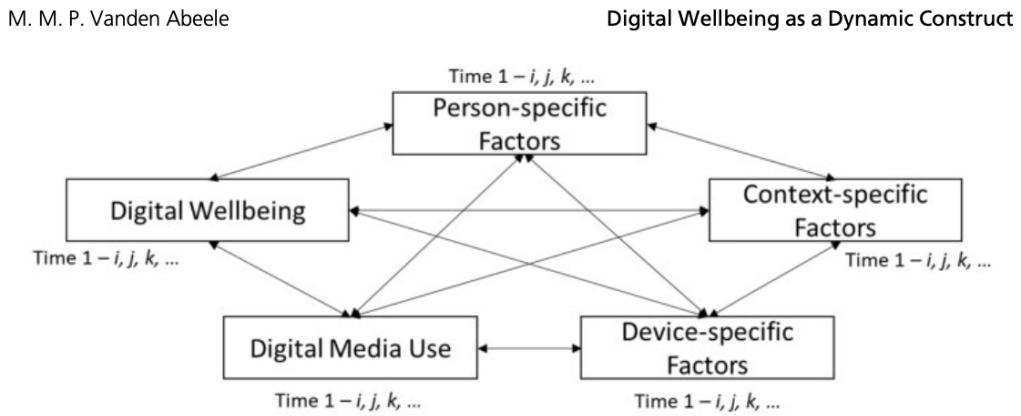
Vanden Abeele (2020) proposes a theoretical model of digital wellbeing as a dynamic construct based on four key considerations. First, the model disassociates from prior work in psychology connecting digital wellbeing to digital addiction narratives (Przybylski & Weinstein, 2017; Orben & Przybylski; 2019; Twenge, 2019). Second, it recognises that digital technologies can positively impact wellbeing and potentially create positive hedonic and eudaimonic experiences for users. Third, it acknowledges that digital welling is not a fixed state. Fourth, it recognised that digital wellbeing is attained when there is a balance

between the positive and negative aspects of digital technologies. Drawing on this theoretical model Vanden Abeele (2020) defines digital wellbeing as:

> A subjective individual experience of optimal balance between the benefits and drawbacks obtained from mobile connectivity. This experiential state is comprised of affective and cognitive appraisals of the integration of digital connectivity into ordinary life. People achieve digital wellbeing when experiencing maximal controlled pleasure and functional support, together with minimal loss of control and functional impairment (ibid., p. 7).

The accompanying model of digital wellbeing recognises a range of influencing factors: person-specific factors; context-specific factors; and device specific factors as influencing digital media use and digital wellbeing (figure 2.9 below). The person-specific and context-specific factors link to Gui, Fasoli & Carridore's (2017) understanding of digital wellbeing as a combination of digital wellbeing skills and social factors. Vanden Abeele's model is the only model of digital wellbeing reviewed that acknowledges the impact of technology design on digital wellbeing.

Figure 2.12 Vanden Abeele's Model: Digital Wellbeing as a Dynamic Construct



Outside of academia, Google (2021) offers a definition of digital wellbeing on their website as:

> Crafting and maintaining a healthy relationship with technology, how technology serves us and moves us towards our goals, rather than distracting us, interrupting us or getting in the way (no page number).

This definition references both the positive potential impact of digital technology on wellbeing and also the challenges that technology presents to wellbeing. The individual user is implicitly responsible for managing their own digital wellbeing, and such an

approach has been criticised for absolving the technology sector of any responsibility for the impact of their product on consumer wellbeing (Dennis, 2020).

2.4.3 Current trends in digital wellbeing research

This section offers an overview of current trends emerging in the digital wellbeing literature including: digital overuse; digital distraction; the positive potential of digital technologies; the impact of social media on wellbeing; and ethical issues relating to digital wellbeing.

2.4.3.1 Digital overuse

Current literature on digital overuse falls into two camps: studies framing digital overuse from a medicalised perspective in psychology (Orben & Przybylski, 2019; Twenge, 2019), and studies that frame digital overuse as a social phenomenon (Sutton, 2020; Gui & Büchi, 2021). The work in psychology framing digital overuse as addiction focuses to a great extent on screen time and smartphone usage of children and adolescents (Bruggerman *et al.,* 2019) and the findings are somewhat inconclusive. Some studies demonstrate little impact of screen time on wellbeing (Przybylski & Weinstein; 2017; Orben & Przybylski, 2019), while others suggest a significant impact (Bruggerman *et al.,* 2019). The discrepancies between these studies has caused some debate (Twenge, 2019). The findings of Przybylski & Weinstein (2017) and Orben & Przybylski (2019) which indicate a minimal impact of screen time on wellbeing have been quoted widely in both academic literature and media discourse. However, in a reanalysis of these study datasets, Twenge (2019) found that high levels of digital media usage had a significant impact on psychological wellbeing. Twenge (ibid.) suggests that the disparity between the analyses is due to the research methodology, and might also be attributed to the fact that some of the studies were conducted “before smartphones became common and thus before levels of digital-media use were significantly elevated” (p. 376).

Gui & Buchi (2021) distance their work from medicalised perspectives on digital overload/digital overuse, describing digital overload as a “less pathological notion of feeling overwhelmed by communication content and connections" (p. 4). Furthermore, digital overuse is framed as a subjective experience or ‘perceived digital overload’. Their research examining the ‘perceived digital overuse’ of n = 2,008 Italian internet users,

reported a significant percentage of users (twenty-six to forty-three percent) engage with digital technology more than they would like. The notion of 'perceived digital overuse' is also evident in a study of British internet usage, with forty-nine percent of respondents perceiving that they spend longer than they intend browsing the internet (Ofsted, 2019). Sutton (2020) also frames digital wellbeing as a social phenomenon and suggests that "values, rather than clinical issues, are what are at stake in the conversation around digital addiction and harm" (p. 17). Drawing on research conducted with a group of n=1,000 participants of a digital detox programme in California, Sutton (ibid.) suggests that "it can be far more illuminating to question the ways in which our digital tools interact with social values, and to ask in what ways technology is perceived to be harmful, and by whom" (p. 22).

2.4.3.2 Digital distraction

A key trend emerging in the literature is the impact of digital distractions on learning for children and adolescents (Carrier *et al.,* 2015; Lindström, 2020; Murray, Giralt, & Benini, 2021). Carrier *et al.* (2015) demonstrated that media multitasking allows eight-eighteen year olds in the United states to "squeeze 10 hours and 45 minutes worth of media content into 7 and 1/2 hours of media use" (p. 65). Lindström (2020) explores the specific experience of digital distraction or media multitasking of 'diginatives[2]', who are defined for the study as those born in and around 1990. This longitudinal study which examined digital multitasking behaviour of university students from 2013- 2019 found that intentionally technology mediated multitasking was perceived as beneficial for this cohort, whereas unintentional or accidental multitasking was perceived as disruptive. This work resulted in a conceptual framework for examining digital distraction which connects to the Addas & Pinsonneault's (2015) taxonomy of technology mediated workplace distractions, discussed in the section on digital wellbeing in the workplace (section 2.5). Murray, Giralt, & Benini (2021) conducted a three-year study of the perceptions of digital distractions of 215 undergraduate language learners. The study found that while students were aware of the impact of digital distractions on their studies, they did not have a realistic understanding of the amount of time spent online.

[2] The term 'diginative' or 'digital native' was first introduced by Prensky (2001) to describe the generation who have spent their entire lives using digital technologies. However, the validity of Prensky's terminology has been questioned for some time in the discourse on digital technology (Brown & Czerniewicz, 2010; Reid, Button & Brommeyer, 2023).

The impact of digital distractions on cognition in the broader population is explored by Alutaybi *et al.* (2019) who demonstrate that individuals who frequently multitask using digital technologies have more difficulty filtering out irrelevant stimuli or information from their memory. The impact on cognitive functioning of distractions specific to the workplace context is also explored in the literature on digital wellbeing in the workplace (section 2.5).

The literature and discourse also explores the role of technology design in digital distraction (Schull, 2005; Calvo & Peters, 2018; Centre for Humane Technology, 2020). Calvo, Peters & Ryan (2018) developed the METUX framework to guide technology design to enhance wellbeing, based on research demonstrating the addictive nature of technology design (Schull, 2005). The Centre for Humane Technology (2021) advocates for ethically informed technology design on the basis of their claim that technology is designed to distract. On the other hand, research also indicates that up to fifty percent of interruptions can be categorised as self-interruptions (Mark, *et al.,* 2015), reflecting a human propensity for distraction discussed in Carr's (2011) work on the impact of the internet on cognition.

2.4.3.3 The impact of social media on wellbeing

The mental health impacts of social media is a theme emerging in recent literature with social media usage linked to exhaustion, mental stress, reduced productivity and sleep, identity and social relations (Kushlev & Dunn, 2015; Gui & Büchi, 2021). Research is also prevalent on the overuse of social media. The literature on social media intersects with digital overuse addiction narratives. Excessive social media use is linked to the concept of 'FOMO' or fear of missing out, which is linked to negative effects such as lack of sleep, reduced life competency, emotional tension, negative effects on physical well-being, anxiety and a lack of emotional control (Alutaybi *et al.*, 2019).

2.4.3.4 The ethics of digital wellbeing

Ethical issues relating to digital wellbeing have recently come to the fore in the research. A special collection on the topic (Burr & Floridi, 2020) explores themes such as: autonomy in Artificial Intelligence systems; depression and digital wellbeing; and software to human

interactions. Calvo & Peters (2018) suggest that autonomy can be threatened by technology but proffer their METUX (Motivation, Engagement, & Thriving in User Experience) framework as a solution for designing technology that protects user autonomy. Gui & Büchi's (2021) research on digital overuse makes reference to the literature exploring "digital divide" narratives, and suggest that digital overuse may lead to a new type of digital divide between users with digital wellbeing skills and those without such skills or a digital inequality "which is no longer linked to the scarcity of access and usage opportunities but to the management of their overabundance" (p.14).

2.4.3 Digital wellbeing interventions

The literature review reveals four key approaches used to address digital wellbeing. Just one of these approaches relates to technology design - ethical frameworks and guidelines (Calvo, Peters & Ryan, 2018; CHT, 2020). Two concentrate on individual capabilities: digital capability/competence frameworks (JISC, 2019a; Biggins & Holley, 2020); and training interventions (Gui *et al.,* 2019; Themelis & Sime, 2019). The fourth involves disconnecting from digital technologies (Sutton, 2020; Fasoli, 2021).

2.4.3.1 Ethical frameworks for technology design

Ethical frameworks for technology design have recently emerged from Human-Computer Interaction (HCI) research, sociology research, and Non-Governmental Organisations (NGOs). In the field of HCI, Calvo & Peters (2018) propose two approaches to designing technology for a positive impact on user wellbeing: removing problems or challenges to wellbeing in the design process (linking to a hedonic wellbeing); and designing technology to actively promote wellbeing (linking to eudaimonic wellbeing). The METUX (Motivation, Engagement, & Thriving in User Experience) framework (ibid.) is described as "a model for bridging Self-Determination Theory (SDT) to technology design practice" (p. 12). The framework was designed to evaluate the impact of technology design on wellbeing, and draws on an eudaimonic understanding of wellbeing to consider "how can technology be designed to support wellbeing that encompasses more than just immediate hedonic experience, but also its longer-term eudaimonia, or true flourishing?" (ibid, p. 2).

The Centre for Humane Technology (CHT) describes its mission as "to drive a comprehensive shift toward humane technology that supports our well-being, democracy,

and shared information environment" (Centre for Humane Technology, 2019, no page number). The CHT takes a rules based approach to supporting digital wellbeing offering technology designers a framework for 'humane' technology design (Dennis, 2021). In contrast to the field of positive computing, the CHT focuses largely on the potential negative impact of technology design, publishing a 'ledger of harms' outlining the scope of negative impact (Centre for Humane Technology, 2021). More recently, research centres such as the the Institute for Ethical Artificial Intelligence in Education, facilitated round table discussions with leaders in technology, industry and academia to develop an ethical framework specific to artificial intelligence technologies (Institute for Ethical Artificial Intelligence in Education, 2020).

The work to develop frameworks for ethical technology design has been criticised in some quarters. Burr, Taddeo & Floridi (2020) caution that the lack of an agreed definition of wellbeing and subsequent issues relating to measuring wellbeing may present a barrier for technology designers in addressing digital wellbeing. Hannin (2021) is a proponent of regulating technology companies and suggests that the approach taken by ethicists to align users' needs with the goals of technology companies is naive. Profit will always win over users' wellbeing, thus minimising the impact of organisations such as the Centre for Humane Technology (ibid.).

2.4.3.2 Digital disconnection

Emerging research suggests that disconnection strategies can impact positively on wellbeing (Nguyen, 2021). Nguyen (2021) explored the strategies used by n=30 adults to disconnect from social media, and how these strategies impacted their wellbeing. The findings uncovered a wide range of strategies that fall into three broad categories: disconnecting from devices; disconnecting from specific platforms or applications; and disconnecting from specific features of platforms or applications. Broadly, participants of the study perceived disconnection strategies to impact positively on their wellbeing.

While emerging studies offer promising findings in relation to the impact of disconnection strategies, the digital detox approach has also garnered criticism within the discourse on digital wellbeing. Dennis (2021) suggests that the digital detox is in conflict with the inherent design of many technologies which aim to encourage engagement. Biggins & Holley (2020) criticise the oversimplification of digital wellbeing presented in technology

company resources which suggest that "disconnection somehow magically produces ‘digital wellbeing” (no page number). Beattie & Daub (2020) suggest that the recent embracing of digital wellbeing functionalities by technology companies represents a cynical measure to ensure that technology is not subject to legislative regulation in the future and content that “digital well-being is an industry-driven response to this sceptical technology discourse and ostensibly seeks to rebalance users’ relationships with their smart devices” (no page number). While Fasoli (2021) advocates the use of “self-nudging”(p. 13) and pre-commitment strategies as solutions for managing digital overload that connect to the concept of digital disconnection, he suggests that these strategies are not a panacea for digital overuse or distraction and “as long as the technological design of digital products is devoted to the exploitation of our attention, digital technologies will represent a challenge for users” (p.15).

Outside of theoretical work and peer-reviewed research, it is important to note here that several technology companies have recently developed integrated digital wellbeing features which generally follow the digital detox approach. TikTok’s ‘safety centre’ focuses on supporting users to have “more control over how much time you spend on TikTok and limiting content that may not be appropriate for all audiences” (TikTok, 2020; no page number). Instagram is currently developing guidance on digital wellbeing while using the photo-sharing application, and has created nudges to encourage users to take breaks from scrolling (Nix, 2021).

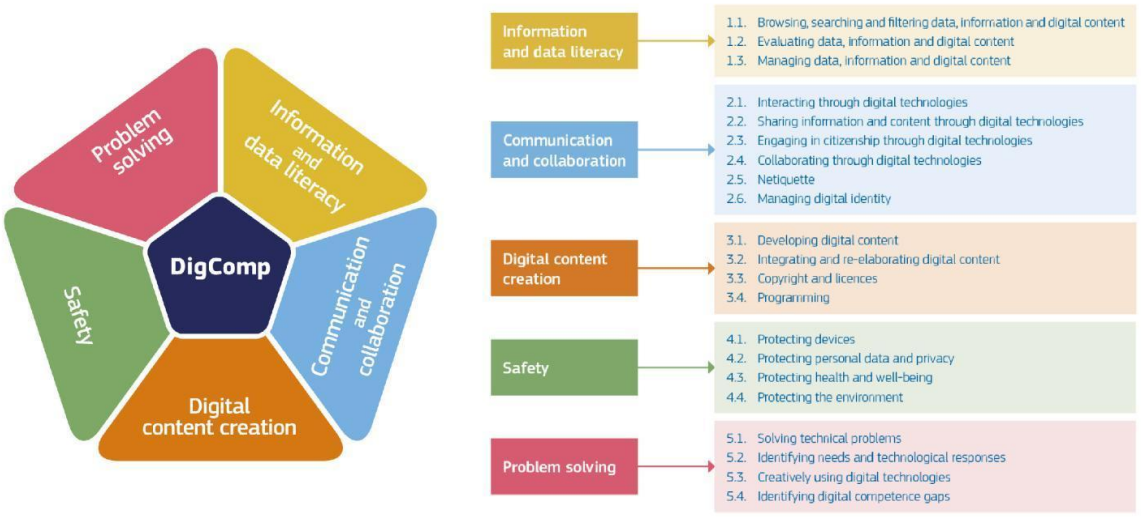
2.4.3.3 Digital capabilities frameworks

Several digital capabilities frameworks have been developed over the last decade to support the development of digital literacy and skills and latterly include either explicit or implicit reference to digital wellbeing.

The DigComp Framework is described as: “a tool to improve citizens’ digital competence, help policy-makers formulate policies that support digital competence building, and plan education and training interventions to improve the digital competence of specific target groups” (Vuorikari *et al.,* 2016; p. 3). Developed by the European Commission, the framework outlines twenty-one dimensions across five key areas of digital competences: information; communication; content creation; safety; and problem solving. The latest version of the framework (figure 2.14) includes specific reference to the impact of digital

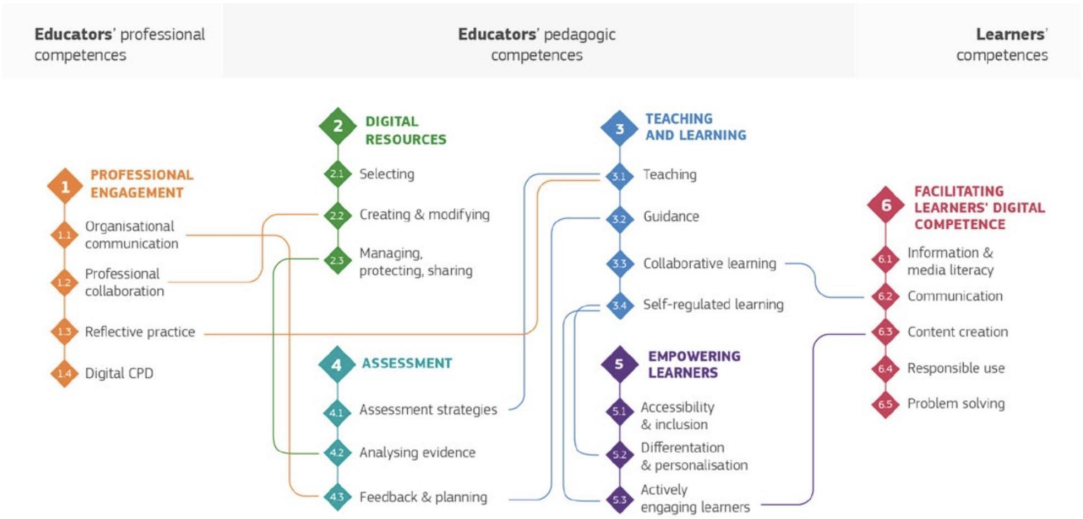
technologies on wellbeing or the "risks and threats to physical and psychological well-being while using digital technologies" (ibid: p. 39). The framework offers examples of the skills, knowledge and attitudes required to manage such threats such as awareness of "the importance of balancing the use of digital technologies with non-use as an option, as many different factors in digital life can impact on personal health, wellbeing and life satisfaction" (ibid. p. 40).

Figure 2.13 DigComp Framework 2022



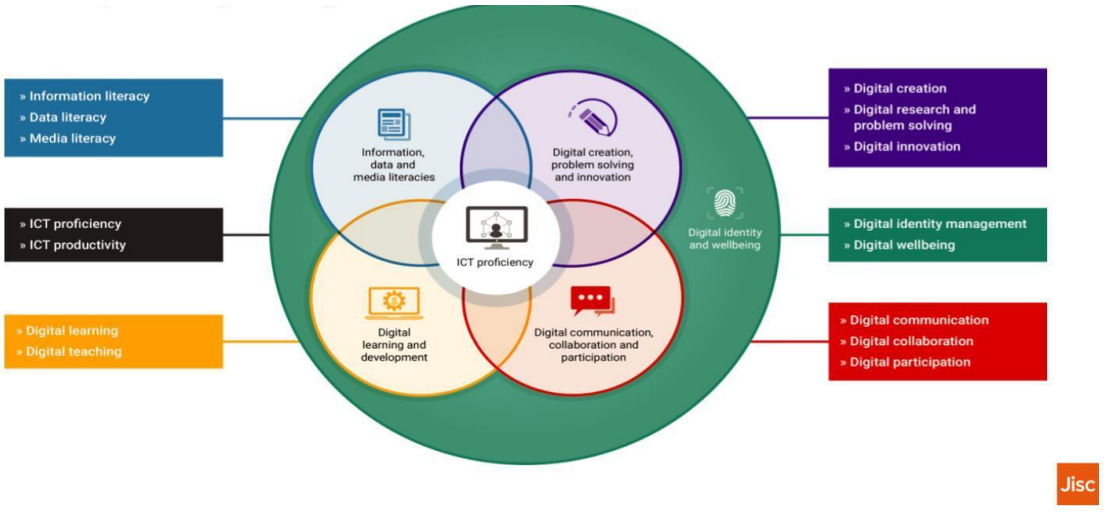
The DigCompEdu framework (Punie & Redecker, 2017) was designed to support educators across all levels of education to develop digital competences "to be able to seize the potential of digital technologies for enhancing and innovating education" (p. 8). The framework (figure 2.15) does not explicitly mention digital wellbeing but digital wellbeing is implicit elements relating to digital wellbeing are implicit in Area 6: Facilitating learners' digital competence subsection, responsible use of technology.

Figure 2.14 DigCompEdu Framework (Punie & Redecker, 2017)



The most recent JISC (2018) digital capabilities framework represents digital identity and wellbeing as the foundation layer of digital capabilities, thus connecting digital identity and wellbeing with all digital skills (figure 2.16).

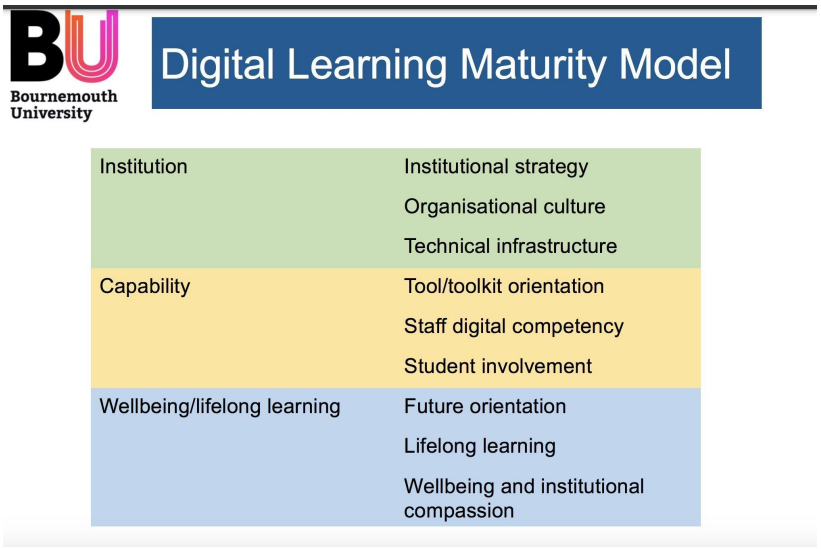
Figure 2.15 Jisc Digital Capabilities Framework (JISC 2018)



Biggins & Holley (2020) developed a digital maturity model which incorporates wellbeing based on an analysis of technology-enhanced learning toolkits used to support staff to engage with technology for teaching and learning (figure 2.17).The concept of institutional compassion - an institutional commitment to the lifelong learning needs of staff in relation to digital competencies - is introduced in the model. The work proposes that it is not sufficient for educational institutions to provide digital wellbeing interventions for staff or

students, and that wellbeing and digital wellbeing must be embedded across the infrastructure of the organisation. This analysis echoes concerns raised in the workplace wellbeing literature about an intervention approach to addressing workplace wellbeing resulting in a form of 'box-ticking' rather than meaningful institute wide support (Donaldson, Dowlett & Rao, 2015).

Figure 2.16 Digital Learning Maturity Model (Biggins & Holley, 2020)



In the Irish context, the All Aboard Project (National Forum for Teaching & Learning, 2018) developed a digital skills framework for Higher Education that uses a striking metro map metaphor, with each of seven categories of digital skills represented by a distinct 'metro' line (figure 2.18). Digital skills related to that category or 'metro line' are mapped across the route. Digital wellbeing is addressed under the 'identity and wellbeing' category, which includes skills relating to online identity, digital footprint, safety, ethics and privacy. While these sub themes or 'stations' do not specifically mention the positive potential impact of technology on wellbeing, this theme is explored in the broader framework in categories including: communication and collaboration; teaching and learning; finding and using information; and creation and innovation.

Figure 2.17 All Aboard Digital Skills Framework

While digital capability frameworks are widely used and referenced in higher education practice, evaluations of frameworks in respect of supporting digital wellbeing have yet to emerge.

2.4.3.4 Training interventions

Digital wellbeing training interventions have recently emerged in the education sector, with work to date coming from the primary and second level sectors (Themelis & Sime, 2019). The Digital Schools Project (Gui *et al.,* 2018) was designed to develop critical thinking skills relating to digital technologies for students at second level. The Lancaster Digital Educators Project (2020) developed a series of outputs including a digital wellbeing educators curriculum and set of course materials to "provide educators with practical knowledge, skills and resources to help them ensure their students are educated in digital wellbeing" (ibid., 2020: no page number). The curriculum comprises eight modules of learning covering topics such as managing digital distractions and digital citizenship.

Several technology companies have developed short training interventions to address digital wellbeing. Google launched a free digital wellbeing programme in 2019 on the Google Garage[3] platform, which focuses on developing a healthy level of control of technology and limiting time on technology. The programme also focuses on minimising distractions with a section entitled 'Unplugging More Often' (Google, 2021b). The

[3] Google Garage is free learning platform used by Google to support the public to develop their digital skills.

company has also developed a set of guidelines specifically for the Covid-19 remote working context (Google, 2021b).

2.5 Digital Wellbeing in the Workplace

2.5.1 Introduction

While the literature using the specific term ‘digital wellbeing’ is just emerging, earlier work examines the impact of digital technologies on employees using the term ‘techno-stress’. Specific models and definitions of digital wellbeing in the workplace are yet to emerge. Similarly, work evaluating interventions to address digital wellbeing specifically is sparse, but there is a significant body of work relating to interventions to address ‘techno-stress’ (Marsh, Vallejos & Spence, 2022).

2.5.2 Definitions and models of digital wellbeing in the workplace

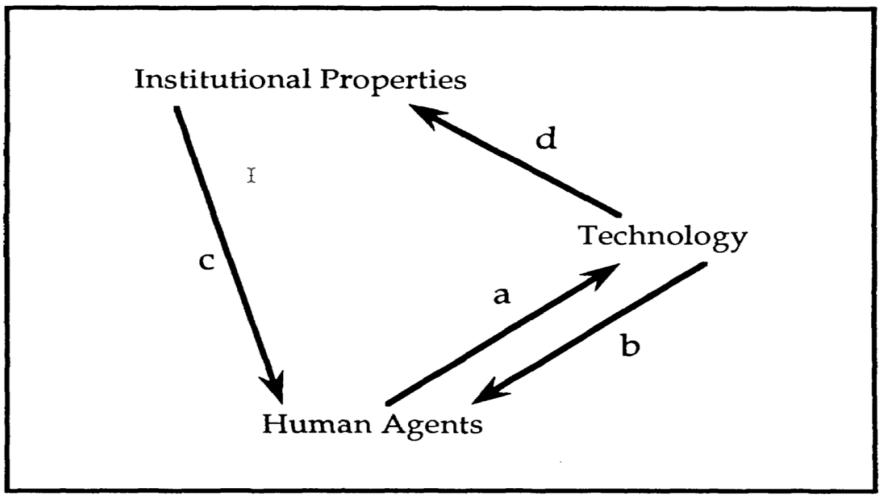
The term ‘technostress’, has been examined in information systems and human-computer interactions research for several years (Ragu-Nathan *et al.,* 2008; Tarafdar & Ragu-Nathan, 2011; Marsh, Vallejos & Spence, 2022). ‘Techno-stress’ differs from understanding of digital wellbeing as it considers the negative impact of digital technologies only.

Tarafdar & Ragu-Nathan (2011) suggests that “professionals experience technostress when they cannot adapt to or cope with information technologies in a healthy manner” (p. 114), and offer definitions of related concepts such as ‘techno-overload’ and ‘techno-invasion’. ‘Techno-overload’ describes situations where use of information systems forces professionals to work more and work faster. This concept links to the term ‘digital overload’ used in more contemporary research. ‘Techno-invasion’ is described as the situation where professionals are available anywhere and anytime due to technology, equating to the concept of always-on culture/blurred work-home boundaries used in more recent work. The research on techno-stress was advanced significantly by the development of a techno-stress instrument (Ragu-Nathan *et al.*, 2008) which has been widely used (Ayyagari *et al.,* 2011). Fischer, Rueter & Reidel (2021) built on this work to create the Digital Stress Scale, an instrument that incorporates recently emerging digital stressors such as data privacy and safety.

While a specific model of digital wellbeing in the workplace is yet to emerge in the research, two models have informed the research on the impact of digital technologies on workplace wellbeing: Orlikowski's (1992) model of the duality of technology and Demerouti *et al.*'s (2001) Job Demands-Resources model.

Orlikowski's (1992) Duality of Technology Model (figure 2.19) proposes that technology is both socially constructed and an objective force within the workplace and therefore the use of technology in the workplace is moderated by human actors and organisational contexts. The model outlines four types of interactions active within the application of technology in the work context: technology is an outcome of human action as it is designed by human actors; technology both facilitates and constrains human action as it provides interpretations of schemes, facilities and norms; institutional properties such as professional norms influence humans in their interaction with technology; interaction with technology influences the institutional properties of an organisation by reinforcing or transforming structures (ibid. 1992).

Figure 2.18 Duality of Technology Model (Orlikowski, 1992)



While the initial model was developed in relation to the application of 'hardware' aspect of technology (Orlikowski, 1992), the model has been drawn upon in research relating to digital information technologies (Brous, Janssen & Herder, 2020), and specific applications of digital information technologies such as online communities of practice (Rosenbaum & Shachaf, 2010). The model has also been used in research relating to collaboration between stakeholders in higher education (Pham & Tanner, 2015).

Demerouti *et al.'s* (2001) Job Demands-Resources Model of Burnout has also been widely drawn upon in studies of workplace wellbeing (Marsh, Vallejos & Spence, 2022) and has influenced a recent body of work which examines the positive and negative impact of digital technologies on workplace wellbeing. The central premise of the model is that burnout or stress in the workplace results from a lack of balance between work demands and resources (figure 2.10). This notion of balance reflects contemporary understandings of digital wellbeing as a balance between the positive (job-resource) and negative (job-demand) aspects of digital technologies. The body of work drawing on the Job Demands-Resource Model of Burnout is explored in more detail in the next section on current research trends.

2.5.3 Current research trends: the Job Demands-Resource Model

The use of Demetouri *et al*.'s (2001) Job Demands-Resource model has resulted in a trend to examine the positive and negative aspects of digital technologies in tandem (Bordi *et al.,* 2018; Potter *et al.,* 2021; Marsh, Vallejos & Spence, 2022). Other work exploring the impact of specific challenges such as work-home boundary management, digital overload and digital distraction also reveals the benefits of digital technologies often coexist with the challenges in respect of the workplace (Rich, Aly, Cecchinato *et al.,* 2020; Cecchinato, 2018; Kushlev & Dunn, 2019). The research to date is discussed in the following sections guided by this framing of digital technologies as both a job-demand and a job-resource.

2.5.3.1 Flexibility & autonomy/work-home boundaries

The flexibility offered by digital technologies has been acknowledged as supporting autonomy and therefore enhancing workplace wellbeing (Diaz *et al.,* 2012; Bordi *et al.,* 2018; Potter *et al.,* 2021). On the other hand the flexibility facilitated by digital technologies can also potentially create blurred work-home boundaries or an 'always-on culture' (Krause, 2018; Potter *et al.,*, 2021). Potter *et al.,* (2021) draw on the Job Demands-Resource Model to explore the benefits and challenges of digital communication technologies in the higher education context through interviews with human resource professionals in Australian public universities. On the job-resource side, digital technologies were perceived as offering flexibility:

> Having access to digital devices was thought to enable workers to have greater autonomy and control over their work demands with respect to location, timing and variety of tasks (p. 7).

The study also recognises the need for both "self- driven and organisational-driven management and boundaries" (ibid., p. 7) in the context of flexible working arrangements to prevent the potential for cross over of work into home-life.

Similarly, Bordi *et al.,* (2018) use the Job Demands-Resource Model to explore digital communication in three workplace contexts: an insurance company; an industrial company; and a financial services company. The study demonstrated that flexibility provided by digital technologies supports autonomy and thus positive workplace wellbeing. For example, participants expressed a preference for email over synchronous communication such as the telephone as email "provided them a better opportunity to decide when they were going to engage in communication activities" (p. 43). On the flip-side, the expectation of constant connectivity emerged as a job-demand for all study participants. Many staff engage with emails after working hours and such practice was associated with a negative impact on wellbeing.

Cox *et al.* (2016) highlight the positive and negative aspects of email, in their work exploring the email management strategies of sixteen professionals in a higher education institution in the United Kingdom. Professional services staff and academics viewed the flexibility of email management as beneficial for both work and personal life. In particular, the flexibility of checking email on smartphones was perceived as an efficient way to cull irrelevant emails. However, this flexibility also challenged the management of work-home boundaries.

Work emerging since the Covid-19 pandemic follows a similar trend (Chartered Institute of Personnel & Development UK, 2020) acknowledges that technology has "provided an important tool for continuing productive work through the crisis" (p.3), whilst providing data demonstrating the negative impact of such flexible work arrangements. Twenty-nine per cent of survey respondents (n=2,414) across a range of sectors in the United Kingdom between June 2019 and June 2020, indicated that the use of portable devices blurs the boundary between work and home life. In the Irish context, McCarthy *et al.* (2020) found that one of the key challenges of remote working is "not being able to switch off" (p. 3).

Research specific to the education sector offers similar insights. Flexible working arrangements such as remote working have positively impacted workplace wellbeing during the pandemic period offering staff the ability to control their individual working environment, but on the other hand:

> Some staff struggled to balance home and work and felt that the lines between the two became blurred, saying they felt they were 'always on' or 'living at work' (JISC, 2022: p. 18).

The research examining the complex reasons for engaging in always-on culture offers further insights. Tarafdar *et al.* (2015) in a survey of over six-hundred computer-using professionals report that seventy-three percent of respondents perceived that refraining from constant connectivity would place them at a disadvantage at work. This finding reflects work elsewhere examining the relationship between the concept of the ideal worker and blurred work-home boundaries. The ideal worker norm is described by Acker (1990) as a norm where the employee is judged by their commitment to the workplace, evidenced by the hours they are available to work. Technology can perpetuate this ideal worker norm by extending the number of hours that employees can dedicate to the workplace (Wilk, 2016). Therefore, the ideal worker norm can be perpetuated by both organisational culture and individuals motivated to present as an 'ideal worker' for career advancement.

The research offers evidence of the impact of interventions to address the negative side of the flexible working arrangements enabled by digital technologies. Micro-boundary strategies are one such approach. Cecchinato (2018) describes micro-boundaries as: "a strategy to limit the impact of micro-role transitions caused by cross-domain technology mediated interruptions" (p. 100). Evidence emerged that the application of micro-boundary strategies increased work-home boundary control and reduced stress for knowledge workers (ibid.). Barber & Santuzzi (2015) suggest that organisations develop clear policy in relation to work-home boundaries and/or encourage groups "to collaboratively discuss and set response expectation agreements independently" (p. 183). Similarly, Wright *et al.* (2014) suggest creating and circulating guidelines explicitly discouraging work communication beyond working hours.

A factor influencing the management of always-on culture is the recent introduction of legislation regarding the 'right to disconnect' (Stedman, 2020). France introduced

legislation in 2017 requiring companies with fifty employees or more to negotiate with employee representatives to determine the conditions of use of electronic communication tools, with other jurisdictions following suit including Belgium, Canada, India, The Philippines and Portugal (Stedman, 2020). In April 2021 the Irish government adopted a code of practice in relation to the right to disconnect (ibid.). This move towards legislation is not universally welcomed, with some viewing this approach as reducing flexibility within the workplace (Hesselberth, 2018; Krause, 2018).

2.5.3.2 The benefits of media multitasking/digital distraction

In the work to date on media multitasking, the negative aspect - digital distraction - garners more attention (Marsh, Vallejos & Spence, 2022) than the positive aspect of multi-tasking with digital technologies (Potter *et al.*, 2021; Mano & Mesch, 2010). A particular focus on email is evident in the literature (Mark, Gudith & Klocke, 2008; Mark *et al.,* 2015). The impact of digital distractions is quantified in terms of time lost at work, and strategies to manage digital distractions are explored.

The negative impact of interruptions in a general sense, not just those caused by digital technologies, has long been established. Mark, Gonzalez & Harris (2005) found that when employees experience an interruption to workflow, it takes twenty-three minutes to return to the original task. These findings are supported in other work, although the exact cost of interruptions varies across studies (Jackson, 2000; Mark, Gudith & Klocke, 2008). The literature also examines the specific interruptions caused by email. Kushlev & Dunn (2015) in a study of the email habits of 124 students and professionals established a causal relationship between the number of times people check email and wellbeing. Furthermore they demonstrated that checking email less often is associated with improved eudaimonic and hedonic aspects of wellbeing.

An alternative perspective on email is also offered in the research. Mano & Mesch (2010) demonstrated that email intensity was positively associated with work performance by increasing “the acquisition of work-related information critical for getting the job done” (p. 68). Similarly, Maçada *et al.* (2021) found that interruptions can improve performance. Barber & Santuzzi (2015) caution that while email interruptions can have a positive influence on productivity, these gains can be diminished by negative impact on mental and physical wellbeing.

Other work demonstrates that the type of digital distraction influences whether the impact is positive or negative. Addas & Pinsonneault (2015) developed a taxonomy of information technology interruptions (figure 2.20), and found that interruptions unrelated to the task at hand fragment attention resulting in reduced efficiency and work quality. On the other hand, their findings demonstrate that 'informational intrusions' have a positive impact on efficiency and effectiveness. This study also explores the different experiences of distractions depending on role. Digital interruptions were found to be more disruptive to working professional's productivity than those of academics (ibid.).

Figure 2.19 Taxonomy of IT interruptions (Addas & Pinsonneault, 2015)

Content relevance of the interruption			Informational	Actionable	System
Intrusion (irrelevant)	Description		IT-mediated interruptions involving the processing of information that is relevant to an individual's secondary (non-primary) task activity	IT-mediated interruptions involving the execution of two-way communicative actions or material actions that are relevant to an individual's secondary (non-primary) task activity	IT-induced interruptions involving system property issues or lack of availability of system resources, which disrupt an individual's current flow of work in his or her primary task activity
	Example(s)		• *Pop-up display interrupting an individual's browsing task with unrelated notifications on sports scores, stock quotes, and weather reports (McCrickard et al., 2003)*	• *Electronic message that interrupts an individual performing a text editing task with a request for contact information from a directory (communicative action) (Kapitsa & Blinnikova, 2003)* • *Digital prompt triggering a switch from the execution of a text editing task to a task that requires summarizing short video clips (material action) (Adamczyk & Bailey, 2004)*	• *Computer or diagnostic malfunction that interrupts the work of a physician (France et al., 2005)*
Intervention (relevant)	Description		IT-mediated interruptions involving the processing of information that is relevant to an individual's primary task activity	IT-mediated interruptions involving the execution of two-way communicative actions or material actions that are relevant to an individual's primary task activity	N/a
	Example(s)		• *Computer-mediated feedback delivered to an individual while participating in a mockup recruitment session (Ang et al., 1993)*	• *Electronic message requesting to share information and question others during a group problem-solving task (communicative action) (Okhuysen & Eisenhardt, 2002)* • *Instant messaging alert instructing an individual about how to organize websites during a web search task (material action) (Cutrell et al., 2000)*	

Strategies to manage distractions suggested in the research focus largely on managing emails. Kushlev and Dunn (201)9 found that individuals' capability to reduce the frequency of checking email, thus reducing stress, is constrained by organisational norms encouraging a rapid response to emails. Organisations can maximise individuals' capability to manage email checking by introducing interventions at organisational level to establish new norms (ibid.). Barber & Santuzzi (2015) concur suggesting that organisations can alleviate the stress associated with rapid email response time expectations by introducing policies around the use of digital technologies and by offering opportunities to discuss such policies.

2.5.3.3 Access to resources/digital overload in the workplace

Access to resources and information via digital technologies has been evidenced to support productivity (Mano & Mesch, 2010; Maçada *et al.*, 2021) but conversely can manifest as a sense of being overwhelmed by digital stimuli and information (Gui & Büchi, 2021). The literature demonstrates that the impact of digital overload (and information overload) is significant (Tarafdar, Gupta & Turel, 2015). Email overload and information overload have been explored in the literature for some time. More recently, digital overload relating to emerging technologies such as Zoom and social media are explored in the literature (Nesher-Shoshan & Whert, 2022). The literature suggests that awareness around digital overload is not sufficient to ensure behaviour changes (Beidermann e*t al.*, 2021). Such a finding supports calls for more research relating to the impact of digital wellbeing interventions on digital wellbeing in a broader sense (Themelis & Sime, 2019).

Access to resources enabled by digital technologies has been evidenced to have many benefits. Potter *et al.* (2021) found that Human Resources professionals feel that access to digital resources support creativity for staff through the use of podcasts etc. The study also found that digital access to supports for workplace wellbeing such as Employee Assistance Programme resources enables employees to access such resources without judgement or discomfort (ibid.). A JISC (2022) survey in relation to remote working found that participants enjoyed "improved access to files and documents and to software and systems as well as to a wider range of colleagues" due to digital technologies during the pandemic period (p. 17).

Digital overload and information overload represent the flip-side of access to digital resources. While digital overload is a recently emerging term in the literature, related terms such as 'techno-overload' have been explored for some time (Tarafdar, Gupta & Turel, 2015). The impact of digital overload is demonstrated as burnout and fatigue (Potter *et al.,* 2021) and neglecting professional duties (Tarafdar, Gupta & Turel, 2015).

The focus on digital overload has been on email and information overload until recently (Mark, 2012; Cecchinato, 2018). However, since the Covid-19 pandemic and the increased use of video conferencing technologies such as Zoom and Microsoft Teams, digital overload relating to these technologies has also come into focus, with the term 'Zoom fatigue' entering the research and discourse (Nesher Shoshan & Whert, 2022; Chartered

Institute of Personnel & Development, UK 2020; McCarthy *et al.,* 2020). Another risk associated with virtual meetings is an overload of meetings with insufficient breaks (JISC, 2022). In addition, the increased use of social media in the workplace has opened debate on the digital overuse related to social media in the workplace (Chartered Institute of Personnel & Development, 2020).

The suggested approaches to managing digital overload are similar to those for managing work-home boundaries and digital distractions. Soucek & Moser (2010) suggest that organisations develop guidelines to encourage staff to limit the amount of emails they send. Specific to digital overload, Mark, Gudith & Klocke (2008) suggest that all staff information be managed through alternative channels to emails to minimise email overload.

2.5.3.4 Effective communication/limitations

The research highlights the positive impact of digital technologies in terms of communication, and recent work focuses on the benefits of digital communication during the pandemic (JISC, 2022; McCarthy *et al.,* 2022). On the flip side, the limitations of digital communication include: social isolation when remote working and interpersonal difficulties due to the tone and quality of the communication (ibid.).

Emerging research demonstrates that digital technologies supported effective communication during the pandemic period (JISC, 2022; McCarthy *et al.,* 2022). In a study of 8,428 remote workers in the Irish context, McCarthy *et al.* (2022) found that thirty-eight percent of respondents felt that remote/hybrid working through digital technologies impacted positively on team communication and collaboration. Research exploring the remote working experience of professional services staff in higher education suggest several advantages of digital communications including improved efficiency, improved responsiveness and the value of video meetings (JISC, 2022).

On the other hand, Bordi *et al.* (2018) demonstrate that the quality of digital communication messages can constitute a work demand with many digital communications poorly constructed and generating the need for "long communication chains as employees send follow up messages to obtain all pertinent information" (p. 40). Such additional work was perceived as increasing workload and inducing stress. Potter *et al.* (2021) illustrate

that digital communications can cause interpersonal conflict and issues as “ensuring a message is communicated and received as it is intended is a challenge when using digital communication” (p. 12). McCarthy *et al. (*2021) showed that remote working had a negative impact on engagement for a significant number of employees (thirty-five percent of n=8,428) over a range of work contexts during the Covid-19 pandemic. Furthermore, a sense of isolation was experienced by staff across a range of sectors including education (Chartered Institute of Personnel & Development UK, 2020; McCarthy *et al.*, 2020; JISC, 2022).

2.5.4 Digital wellbeing interventions for the workplace

There is a limited body of work to date relating to the interventions to address digital wellbeing in a broader sense in the workplace context (Rich, Aly, Cecchinato *et al.*, 2020). although research relating to related concepts such as techno-stress and work-home boundaries are more plentiful (Jackson, Burgess & Edwards, 2006; Soucek & Moser, 2010; Cecchinato, 2018). Outside of the peer-reviewed literature, the concept of ‘deep-work’ has also recently emerged as a popular approach to managing digital wellbeing (Newport, 2016; Jenna & Basu, 2018; Sheppard, 2022).

Jackson, Burgess & Edwards (2006) designed a similar training intervention for a large company which targeted basic email writing and processing skills. The evaluation findings demonstrated a significant improvement in the overall clarity of messages received by recipients as a result of the training. Soucek & Moser (2010) developed a training intervention aimed at improving email management including filtering the volume of messages and improving the quality of the messages. The evaluation of this intervention demonstrated an improved quality of email messages and improved capability to manage the volume of email. Rich, Aly, Cecchinato *et al.* (2020) designed and evaluated a wellbeing intervention for student doctors, aiming to address workplace wellbeing in a broad sense, with a particular focus on work-home boundary management. The intervention included time for participants to share experiences of workplace wellbeing and drew on the expertise of the team to provide participants with strategies to manage the ‘micro-boundaries’ between work and home lives. The evaluation of this intervention found that participants valued micro-boundaries as practical strategies to manage digital

wellbeing and work-home boundaries. Participants also welcomed the provision of a 'safe space' to discuss workplace wellbeing, stress and burnout without judgement.

Newport's (2016) 'deep work' strategy has been widely discussed in the popular discourse on digital wellbeing (Jenna & Basu, 2018; Sheppard, 2022) with many professions embracing the concept to manage workplace wellbeing (Bhargava, 2017; Waxman, 2018). The 'deep work' strategy simply involves blocking off time during the working day to disconnect from technology and concentrate on one individual piece of work.

2.6 Summary of the literature review

This literature review sought to explore four discrete bodies of literature and to provide answers to a series of questions relating to the research as outlined below.

1. What is the theoretical background of digital wellbeing in the workplace? How are the phenomena of wellbeing; workplace wellbeing; digital wellbeing and digital wellbeing in the workplace connected?
2. What are the gaps in the literature in relation to digital wellbeing in the higher education workplace and how can this study address those gaps?
3. Drawing on the literature, how should digital wellbeing be defined and modelled for the purposes of this study?
4. How can the literature inform the design and delivery of a digital wellbeing intervention for staff in a higher education context?

2.6.1 The theoretical background of digital wellbeing in the workplace: building connections across the literature

The theoretical background of digital wellbeing in the workplace is established through the connections drawn between the literature in the four areas of work reviewed (figure 2.21). The dimensions articulated in the definitions of general wellbeing, namely hedonic and eudaimonic aspects of wellbeing, are drawn upon in the literature relating to workplace wellbeing, digital wellbeing and digital wellbeing in the workplace. Similarly, the modelling of concepts across all four areas of draw on the general wellbeing literature. The description of wellbeing as a dynamic state of balance influenced by social factors which constitute either challenges or resources (Headey & Wearing, 1991; Csikszentmihalyi,

2000; Ryan & Deci, 2000; Dodge et al., 2012; Cummins, 2016), is evident in models of workplace wellbeing (Demerouti *et al*., 2011), digital wellbeing (Vanden Abbeele, 2020), and digital wellbeing in the workplace (Orlikowski, 1992). Furthermore, many of the models across all four areas of literature draw on the general wellbeing literature which describes conditions required for wellbeing (Ryff, 2000; Ryan & Deci, 2001; Seligman, 2011). For example in the workplace wellbeing literature Warr (2009) identifies a range of conditions for workplace wellbeing, many of which connect to those conditions articulated in Self-determination Theory (Ryan & Deci, 2001) and Ryff's (2000) model of wellbeing.

To emphasise the connections between the four phenomena explored in the literature, the review revealed that one of the general wellbeing models, Self-determination Theory (SDT) has been used in research on both general wellbeing and workplace wellbeing (Deci, Olafsen & Ryan, 2017). Similarly, the Job Demands-Resource Model of Burnout has been used in research on workplace wellbeing (Bakker & Demerouti, 2017) and digital wellbeing in the workplace (Marsh, Vallegos & Spence, 2022).

In respect of interventions, the influence of positive psychology is evident throughout the general wellbeing and workplace wellbeing literature. Positive psychology is less explicitly mentioned in work on digital wellbeing and digital wellbeing in the workplace, although the links between positive psychology and positive computing have been discussed (Calvo & Peters, 2014). Positive computing is described as a precursor to the term 'digital wellbeing'. A significant number of evaluations of general wellbeing and workplace wellbeing interventions are available, although concerns are raised in terms of the rigour and validity of such studies. While evaluations of digital wellbeing interventions and digital wellbeing interventions for the workplace are more recently emerging, the reseach on the rigour and validity of general wellbeing and workplace wellbeing interventions can inform work in those fields.

Finally, while the literature on wellbeing and workplace wellbeing is extensive, current themes within these fields connect with emerging digital wellbeing and digital wellbeing in the workplace research such as: digital distractions; digital overload; work-home boundary management; student wellbeing in higher education; and the impact of the Covid-19 pandemic.

Figure 2.20 Literature Review Summary

	Wellbeing	Workplace Wellbeing	Digital Wellbeing	Digital Wellbeing in the Workplace
Definitions/ model	**Dimensions:** eudaimonic & hedonic.	**Dimensions:** hedonic (job satisfaction) & eudaimonic (job engagement).	**Dimensions:** eudaimonic & hedonic.	**Dimensions:** more focus on hedonic.
	Description: a dynamic state of balance challenges/resources.	**Description:** a state of balance between demands & resources - Job Demands-Resource model (Demerouti *et al.*, 2001).	**Description:** balance between +ve/-ve impact of technology (JISC model, 2019) dynamic (Vanden Abeele, 2020).	**Description:** balance between +ve/-ve impact of technology. Job Demands-Resource model (Demerouti *et al.*, 2001); Duality of Technology (Orlikowski, 1992).
	Conditions for: PERMA Model (Seligman, 2011) & SDT model (Ryan & Deci, 2000).	**Conditions for:** SDT model (Ryan & Deci, 2001); Warr's (2000) Vitamin model.	**Conditions for:** individual digital skills & ethical digital technology design.	**Conditions for:** focus on influencing factors - institutional, technology and users (Orlikowski, 1992).
Interventions	**Approaches:** Numerous. **Strong positive psychology** influence.	**Approaches:** Numerous. Strong positive psychology influence.	**Approaches:** ethical guidance for technology design; digital capabilities frameworks; bespoke training; disconnection strategies.	**Approaches:** digital skills training; micro-boundary strategies; disconnection strategies.
	Findings: positive overall. Concern regarding evaluation methodologies.	**Findings:** largely positive. Concern regarding evaluation methodologies..	**Findings:** promising for disconnection strategies. Limited work on behaviour change. Concern regarding evaluation methodologies. .	**Findings:** Limited evaluations to date specific to the term 'digital wellbeing'. Positive findings email management & micro-boundaries.
Current themes	Impact of Covid-19 pandemic. Relevant to this study: student wellbeing; academic wellbeing; teacher wellbeing.	Impact of Covid-19 pandemic. Work-home boundaries; remote working; workload; organisational structures e.g. neoliberalism; job security; technology integration.	Impact of Covid-19 pandemic. Digital overuse & distraction; social media; ethical issues; artificial intelligence; digital divide; privacy and autonomy.	Impact of Covid-19 pandemic. Digital overuse/distraction; work-home boundaries; remote working.

2.7 Current gaps in the literature

The literature review also helped to identify the gaps in the literature relevant to digital wellbeing in a higher education workplace context as follows:

1. Limited work in relation to the digital wellbeing of higher education staff in non-teaching roles (Potter *et al.*, 2021; Wilk, 2016).
2. Limited work on the impact of digital wellbeing interventions on behaviour, beyond knowledge acquisition (Themelis & Sime, 2019)
3. Limited work in relation to specific potential positive impact of technology on wellbeing in the workplace context (Diaz *et al.,* 2012).
4. The impact of organisational factors impacting the effectiveness of a digital wellbeing intervention (Potter *et al.,* 2021).

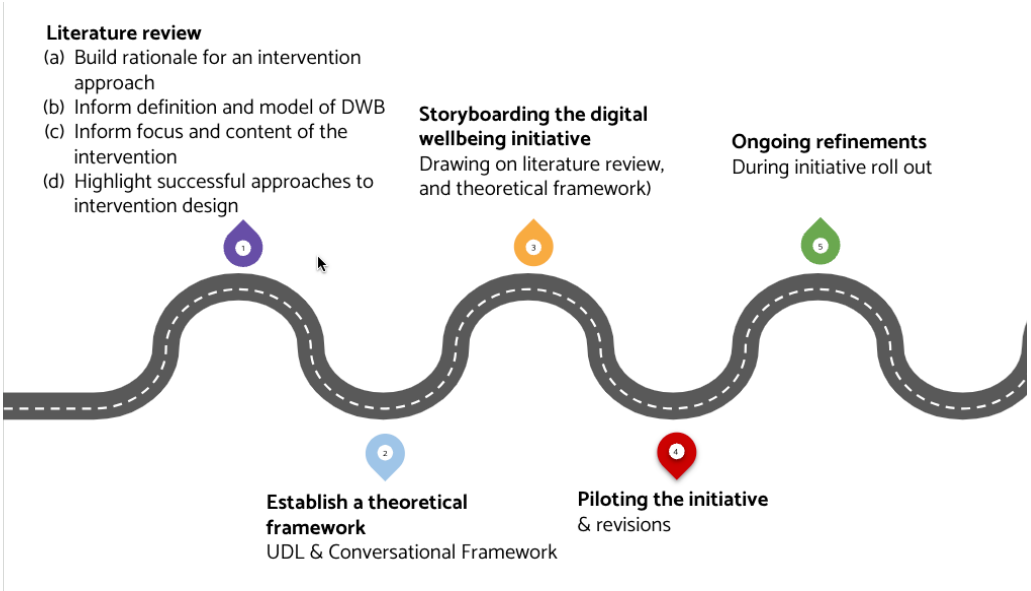
The answer to the final two questions which relate to the literature informing the definition and model of digital wellbeing for this study and the design and delivery of the digital wellbeing intervention are discussed in detail in chapter three.

Chapter 3: Designing the Digital Wellbeing Intervention

3.1 Introduction

This chapter outlines the process of designing the digital wellbeing intervention at the centre of this study (figure 3.1). The chapter begins by outlining the rationale for drawing on the literature to inform the design and development of the intervention, and how the review was applied in the design process. This section includes a discussion on how the literature review informed the definition and model of digital wellbeing in the workplace developed to support this study. The following section describes the theoretical framework underpinning the design of the intervention which draws on the principles of Universal Design for Learning, and Laurillard's (2002) Conversational Framework. The rationale for using these specific frameworks is also discussed. Next, the storyboarding process for each of the four units of learning that comprise the digital wellbeing intervention is discussed with reference to the literature and the theoretical framework. Finally, the findings from a pilot rollout of the intervention and refinements based on the pilot and ongoing amendments during the roll-out process are discussed.

Figure 3.1 Digital Wellbeing Initiative Design Process



3.2 Connecting the literature to the intervention design

The literature review informed the design of the digital wellbeing intervention in four ways. First, the review allowed the researcher to draw conclusions on the value of an intervention approach to supporting staff digital wellbeing by examining the evidence in the literature relating to wellbeing interventions delivered to support wellbeing, workplace wellbeing, digital wellbeing and digital wellbeing in the workplace. Second, the literature informed the development of a definition and model of digital wellbeing in the workplace to guide the development of the intervention design. Third, the literature review provided evidence of the key challenges presented by digital technologies to workplace wellbeing, and the positive potential impact of digital technologies on workplace wellbeing which informed the focus of the digital wellbeing intervention. Finally, the literature also provided evidence of intervention approaches applied successfully in prior work, thus ensuring that the intervention was underpinned by a strong evidence base in relation to intervention design and delivery.

3.2.1 Building a rationale for an intervention approach to addressing digital wellbeing

An intervention approach to addressing workplace wellbeing is criticised by some as placing the responsibility for wellbeing on the individual employee rather than addressing underlying contextual and environmental factors (Eby *et al.,* 2019). However, designing and delivering an intervention was within the scope of influence of the researcher's role as an academic developer, whereas addressing contextual and environmental factors in the timeframe of this study was not. To support an understanding of the broader responsibility for digital wellbeing as outlined in the literature, the researcher designed the intervention to include learning activities relating to the contextual and environmental factors influencing digital wellbeing in the workplace.

While the literature review revealed some concerns relating to the rigour of studies on the impact of interventions to address general wellbeing and workplace wellbeing, there was evidence to demonstrate the potential positive impact of the intervention approach to addressing workplace wellbeing (Hirschle & Gondim, 2020; Rich, Aly, Cecchinato *et al.,*

2020). The findings in relation to the emerging work on digital wellbeing and digital wellbeing in the workplace offer further evidence of the potential for an intervention to positively impact on digital wellbeing in the context of this study (Bordi *et al.,* 2018; Potter *et al*., 2019).

3.2.2 Informing a definition and model of digital wellbeing in the workplace

While related terms such as 'techno-stress' have been used for some time in the literature relating to the impact of digital technologies on workplace wellbeing, a definition of digital wellbeing in the workplace that encompasses both the potential positive and negative impact of digital technologies on workplace wellbeing was yet to emerge. Building on existing definitions and models of digital wellbeing, workplace wellbeing and wellbeing, the definition and model developed to support this study presents digital wellbeing in the workplace as having a dual aspect: managing the challenges presented to workplace wellbeing by digital technologies, and understanding the positive potential of digital technologies in the workplace.

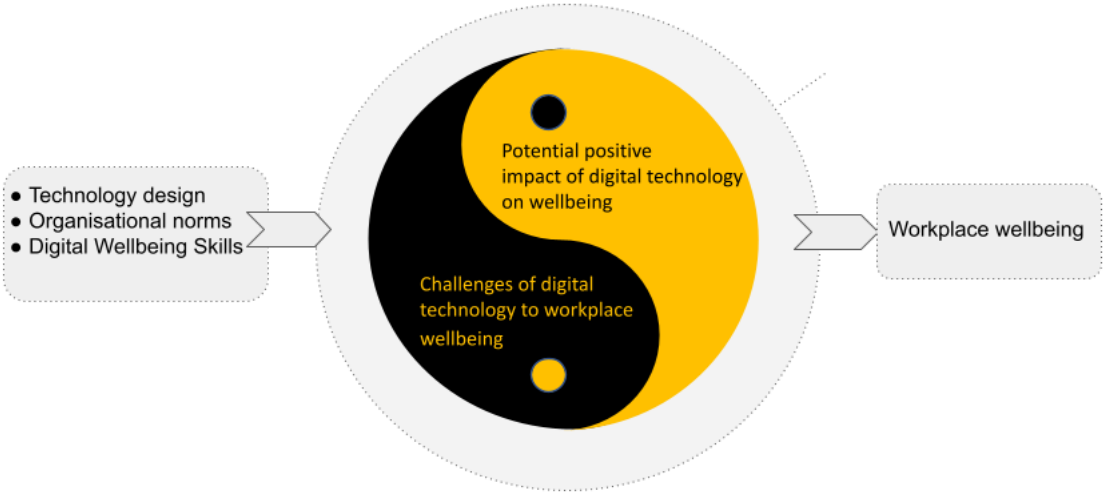
Drawing on this prior work, digital wellbeing in the workplace is defined for the purposes of this study as follows: *Digital wellbeing in the workplace is the impact (positive or negative) of digital technology on workplace wellbeing. A state of digital wellbeing is achieved when an individual has the capability to manage the challenges presented by digital technologies to workplace wellbeing, and understands the positive potential of digital technologies in the workplace.*

A proposed model of digital wellbeing in the workplace expands this definition to highlight the factors influencing digital wellbeing as articulated in the literature: individual digital wellbeing skills organisational (Gui, Fasoli & Carridore, 2017; JISC, 2019a; Vanden Abeele, 2020) cultural norms and structures (ibid.); and technology design (Calvo, Peters & Ryan, 2018; Centre for Humane Technology, 2021, 2022). The model also asserts the influence of digital wellbeing on general workplace wellbeing.

The evidence base for both Orlikowski's (1992) model of the duality of technology and Demerouti *et al.'s* (2001) Job Demands-Resource model provided a strong basis for drawing on that model to inform the model of digital wellbeing in the workplace for this study. The model of digital wellbeing in the workplace also draws on more contemporary

models of digital wellbeing that recognise digital wellbeing as a dynamic state (Vanden Abeele, 2021) and the impact of digital technologies as potentially either positive or negative (JISC, 2019).

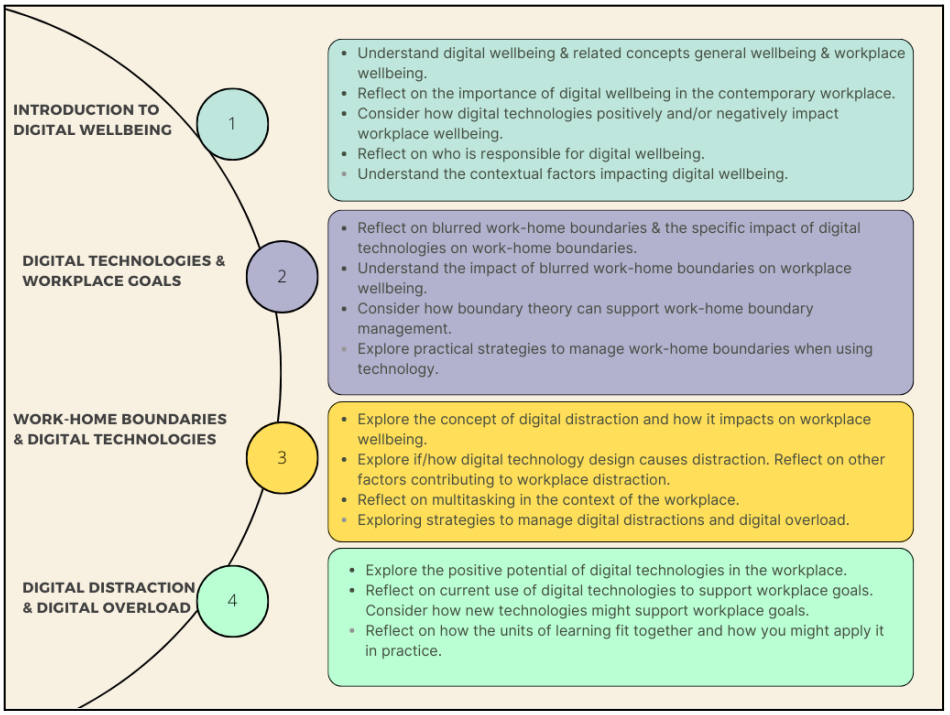
Figure 3.2 Proposed Model of Digital Wellbeing in the Workplace



3.2.3 Informing the content and focus the digital wellbeing intervention

Drawing on the definition and model of digital wellbeing in the workplace, the digital wellbeing intervention was structured to address digital wellbeing as a dual aspect concept. The intervention was designed to: support participants to manage the challenges that digital technologies present to workplace wellbeing; *and* to support participants' understanding of the potential positive impact of digital technologies in the workplace. The key challenges to workplace wellbeing presented by digital technologies in the literature were: work-home boundary management; digital overload; and digital distractions. The key potentially positive impacts of digital technologies on workplace wellbeing were identified as: flexibility and autonomy; media multitasking; access to resources; and effective communication. The content and focus of the digital wellbeing intervention was informed by these findings. The intervention comprised four ninety-minute units of learning delivered across a period of four weeks. A set of learning outcomes were articulated for each of the four units of learning (figure 3.3), again drawing on the literature review (figure 3.3).

Figure 3.3 Overview of Digital Wellbeing Initiative & Learning Outcomes



3.2.4 Informing the approaches used in the digital wellbeing intervention design and delivery

The literature review offered some key insights in respect for designing the digital wellbeing intervention. Prior work has demonstrated that micro-boundary strategies can successfully support staff to manage work-home boundaries (Cecchinato, 2018; Rich, Aly, Cecchinato *et al.,* 2020). The evidence that brief interventions can limit the impact on workplace wellbeing (Ivandic *et al*., 2017) influenced the design of the intervention beyond a one-off workshop to a more sustained intervention comprising a series of four workshops. Prior work that demonstrates the value of providing a 'safe space' to discuss workplace wellbeing without judgement (Rich *et al.*, 2020) influenced the design towards a focus on discussion based and collaborative learning activity types.

Pragmatically, the timeframe for the intervention design did not allow for a partnership approach to designing the intervention with participants and therefore the literature was the key influence on the intervention design. However, the voice of participants was incorporated into the design process in two ways, by allowing feedback through the pilot

and by providing opportunities for feedback throughout the delivery process. To offer one example, the first cohort of the digital wellbeing intervention rollout were invited to select the second workshop in the series based on their current needs. The participants selected to engage with the work-home boundaries workshop as this was of most concern to them at the time. Further details of the pilot feedback are available in section 3.5 and appendix D).

3.3 Establishing a Theoretical Framework

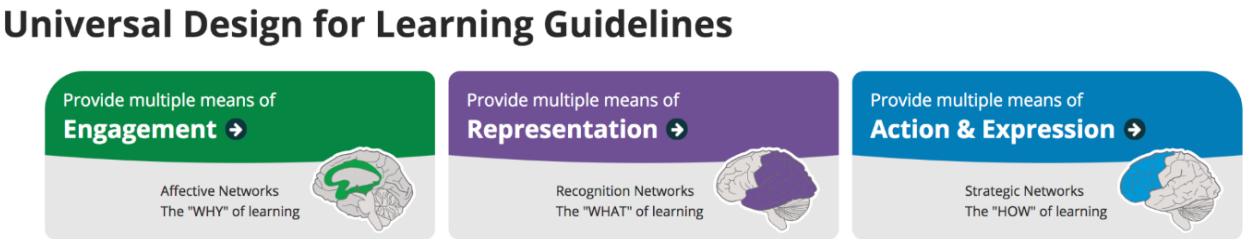
3.3.1 Introduction

The design of the digital wellbeing intervention was underpinned by the principles of Universal Design for Learning (UDL) (CAST, 2021), and Laurillard's (2002) conversational framework. The UDL framework was drawn upon to ensure that the intervention was designed to remove barriers to learning for all potential participants and the Conversational Framework was selected to ensure that the intervention offered a range of learning activity types to potential participants. A brief overview of each of these frameworks and a discussion on the rationale for using them to guide the digital wellbeing intervention design is presented below.

3.3.2 Universal Design for Learning

Universal Design for Learning is a framework guided by a set of principles for curriculum design that aims to remove barriers to learning (CAST, 2021). The framework comprises three principles: Multiple Means of Engagement; Multiple Means of Representation; and Multiple Means of Action and Expression (figure 3.4). At a fundamental level, UDL removes barriers to learning by providing choice to learners throughout the learning process.

Figure 3.4 Universal Design for Learning Framework (CAST, 2021)



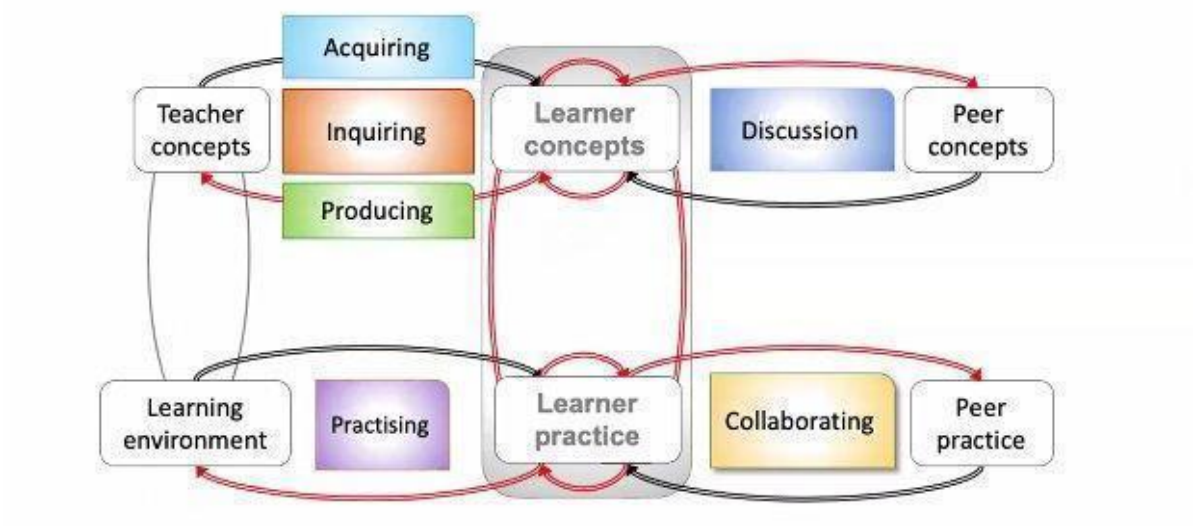
The framework offers practical guidance to apply UDL in practice through a series of guidelines and checkpoints referring to each of the three overarching principles (CAST, 2021). The framework has been widely used across the education sector in Ireland and beyond over the last twenty years to support inclusive educational practices, reflecting national, European and international policy on inclusive education (European Commission, 2012; Department of Education Ireland, 2019; UNESCO, 2016). While one prominent area of research relating to the UDL framework relates to the positive impact of the framework on teaching, learning and assessment practices (Hromalik, Myhill & Carr, 2020; Rusconi & Squillaci, 2023) there is also a substantial body of work that explores the impact of UDL principles on the student experience (Al-Azawei, Serenelli & Lundqvist 2016; Capp, 2017; Kaya & Kaya, 2022). While the impact of UDL on student outcomes is less clearly evidenced in the literature (Capp, 2017; Rao *et al.*, 2020), the validation of instruments to measure the impact of UDL aims to support future work (Basham, Gardner & Smith, 2020; Rao *et al.*, 2020). Furthermore, a body of work has emerged exploring the impact of the UDL framework on designing online learning experiences (Lewitzky & Weaver, 2022; Bray *et al.,* 2023). The researcher's practice in academic development has been informed by the principles of UDL for several years in respect of supporting staff to engage with inclusive educational practices (Buckley, Karazi & Stone, 2018; Buckley, Galvin & Stone, 2020). Furthermore, the UDL framework is widely used to inform curriculum design across the research site. Inclusive education is a key strategic goal of the research site, and UDL principles are specifically recommended to support this goal[4]. For these reasons, the principles of UDL was considered a suitable framework to inform the design of the digital wellbeing intervention, specifically by offering choice and flexibility to participants as regards: how they engage with learning; what they learn; and how to express their learning.

3.3.3 The Conversational Framework

The conversational framework describes learning as "a continuing iterative dialogue between teacher and student and student and peers" (Laurillard, 2002; p. 21). Learning is represented as a series of interactions or dialogues between learner and teacher and learner and peers (figure 3.5).

[4] DCU strategic plan 2017-2022 available @ https://www.dcu.ie/external-affairs/strategic-plan-2017-2022

Figure 3.5 Conversational Framework (Laurillard, 2002)



The learner interacts with peers and educators to develop an understanding of concepts (learner concepts) which are then applied in practice (learner practice). Each interaction is facilitated through one of six learning activity types: acquisition; inquiry; production; discussion; practice; and collaboration. These learning activity types are based on key learning theories including conceptual learning; experiential learning; social constructivism; constructionism; and collaborative learning (Laurillard, 2012). Thus, the framework supports a learning design that can draw on a variety of theories to design learning activities most appropriate for the learning outcomes. Laurillard (ibid.) suggests including as many of the six learning activities as possible to provide a rich learning experience, connecting with the UDL principles by offering multiple means of engagement for learners. An evidence base for the framework in practice supports this theory (Holmberg, 2017; White, 2009; King & Robinson, 2009). In addition, the Conversational Framework was useful in the context of this study as the framework includes recommended learning activities for both traditional and online/blended learning activities as evidenced in work and an evidence base exists to support the framework in practice in the specific context of designing online learning (Basitere, Rzyankina & Le Roux, 2023; Douglas, 2023). Finally, the Conversational Framework has been applied at the research site over several years through the ABC learning design approach, discussed in the next section.

3.4 Storyboarding the Digital Wellbeing Intervention

3.4.1 The ABC learning design approach

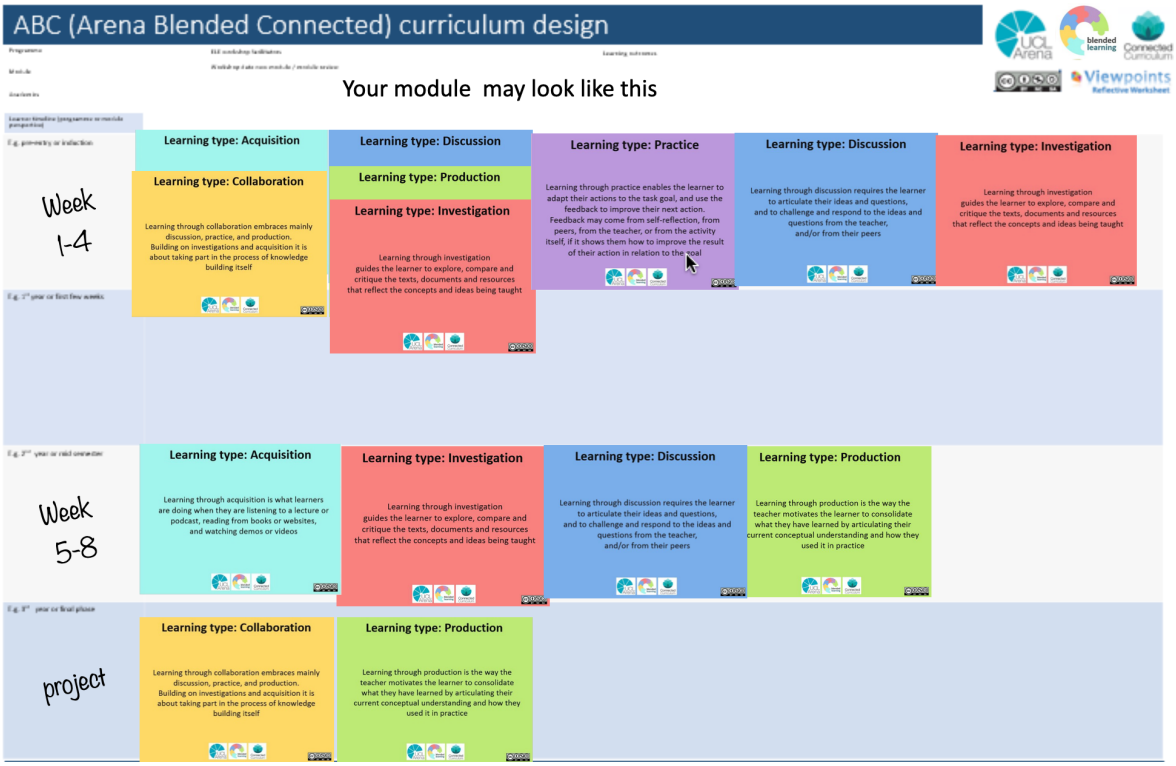
The ABC learning design approach (Young & Perović, 2016) was developed to support time-poor academic teams to design learning experiences through a fast-paced ninety-minute workshop focusing on creating a "visual 'storyboard' outlining the type and sequence of learning activities (both online and offline) required to meet the module's learning outcomes" (ibid. p.390). The storyboard is constructed using sets of learning activity cards that reflect the six learning activity types described in Laurillard's (2002) conversational framework: acquisition; discussion; collaboration; investigation[5]; practice and production.

Figure 3.6 ABC Learning Design storyboarding cards

The first stage of the process involves selecting the appropriate learning activity type for each unit of learning, and mapping these learning activity type cards to the storyboard canvas The storyboard of the learning experience then begins to take shape (figure 3.7).

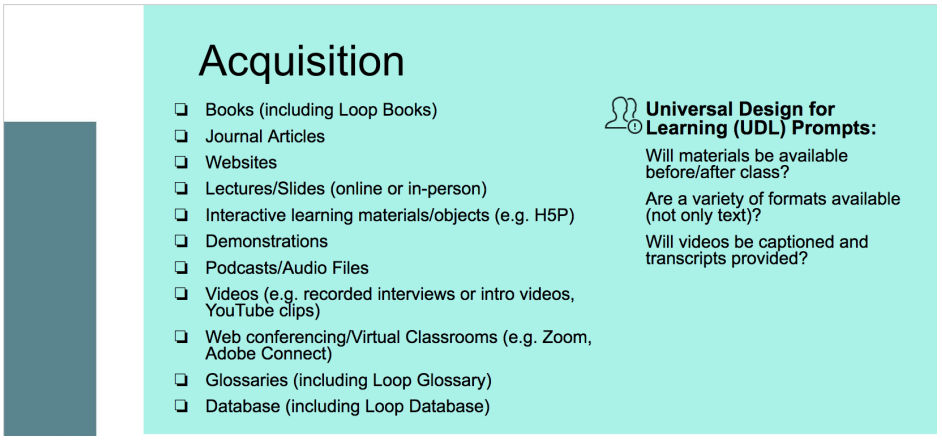
[5] The term 'inquiry' is used in the Conversational Framework, whereas the term 'investigation' is used in the ABC learning design approach.

Figure 3.7 Example of ABC Learning Design storyboard (Young & Perović, 2016).



The next step is to review the specific learning activities (digital and traditional) outlined on the reverse of the ABC learning activity type cards to decide on specific learning activities (example in figure 3.8) and to consider the related UDL[6] prompts.

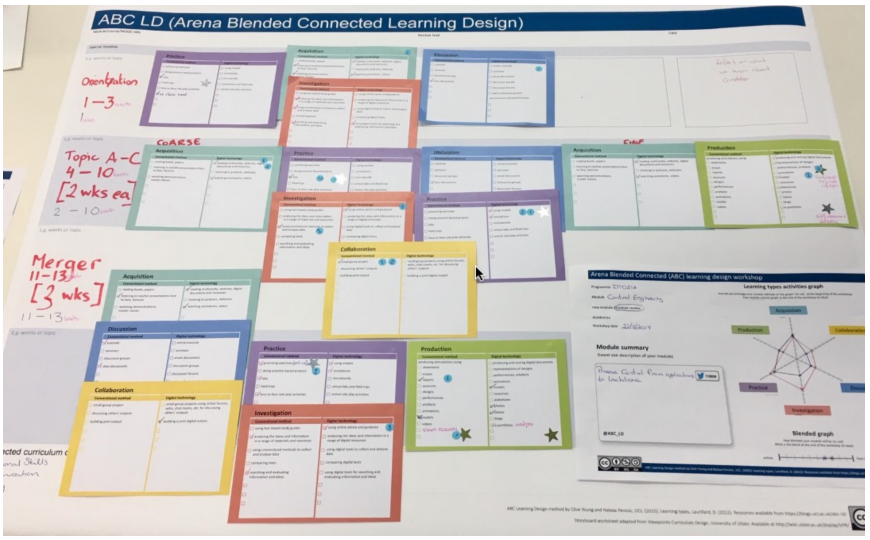
Figure 3.8 Acquisition learning activity card - specific learning activities



[6] ABC learning design cards developed locally at Dublin City University also include UDL prompts to ensure that UDL principles are considered in the learning design process

The final storyboard offers a visual overview of the learning experience that allows the educator to review and critique the mix of learning activity types throughout the learning experience (figure 3.9).

Figure 3.9 Example of complete ABC learning design storyboard (Young & Perović, 2016).



During the Covid-19 pandemic, this paper based process was adapted for online delivery by using digital versions of the storyboard template and the learning activity type cards (Gormley, Stone & Lowney, 2021). These resources were used for designing the digital wellbeing intervention. While the original ABC process includes additional activities such as deciding on formative and summative assessment points, in the context of the digital learning intervention, the storyboard was sufficient for critiquing the design concerning the theoretical framework.

3.4.2 Storyboarding: overall approach

Each ninety-minute unit of learning was designed to comprise three separate thirty-minute subunits of learning (subunits A, B, C) to allow for flexible delivery. Flexible delivery could potentially address the barrier to engaging with workplace wellbeing presented by scheduling (Ivandic *et al.*, 2017; Rich, Aly, Cecchinato *et al.,* 2020). The first two thirty-minute sections (sub-units A & B) were designed to be delivered synchronously to facilitate collaboration and discussion learning activity types. The final thirty-minute section was designed as independent learning and comprised curated sets of resources and related learning activities delivered on the university's Virtual Learning Environment (VLE) (figure 3.9). The VLE page was designed with reference to UDL principles by

including a contacts block for the course coordinator for clarity and by including an accessibility toolbar to allow students adjust screen colour and text size if required.

Figure 3.10 Screenshot of Digital Wellbeing Intervention VLE

Furthermore, the VLE tools were used to develop a range of learning activity types to provide learners with multiple ways to engage with the learning, reflecting the UDL principle - Multiple Means of Engagement. For example an interactive Advent Calendar was created using the H5P[7] content creation tool for cohort 1 as the course completed close to the Christmas holiday (figure 3.9)

Figure 3.11 Screenshot of Interactive Digital Wellbeing Advent Calendar

[7] H5P is an open source content creation tool, more information at https://h5p.org/

The first step for storyboarding each unit of learning was to reflect on the appropriate learning activity type to address each learning outcome. A range of learning activity types were used to provide learners with multiple ways to engage with the learning, reflecting the UDL principle - Multiple Means of Engagement. The presentation activity type was considered suitable for introducing new concepts and the literature relating to digital wellbeing as "students do need to learn what others have discovered, to hear about expert ways of thinking and practising, and what is known already in their field" (Laurillard, 2012: p. 106). Discussion learning activities were widely used as they are described as "powerful for stimulating the productive internal conversation that leads to learning" (ibid. p.143).

Investigation learning activity types were used to encourage the learners to develop the "fundamental skills of learning that are essential for developing their own knowledge, which should be continually adapted, and refined" (ibid. p. 123). The development of learning skills was particularly important in the context of the digital wellbeing intervention as the intention of the intervention was to lay the foundations for continued learning and exploration of digital wellbeing beyond the lifespan of the intervention. Practice activities were designed to support the learner to apply the learning from the intervention in a practical way. Informal collaborative learning activities using virtual collaboration tools were also included to encourage the learners to engage with peers and offer opportunities to "learn from how the others work, what they say and how they address the topic" (ibid. P. 189).

To further align with UDL principles, the acquisition learning activities were provided using a range of resources (live presentation, video, audio, text and online resources) reflecting the UDL principle - Multiple Means of Representation, In addition, all video content was provided with closed captions, removing barriers to learning for colleagues who require a text interpretation of video material. Choice was offered to participants in how to express learning through group discussions, or anonymous collaboration/production learning activity types, reflecting the UDL principle - Multiple Means of Action & Expression.

3.4.3 Storyboarding unit one: understanding digital wellbeing

The literature review established that digital wellbeing is an emerging concept linked to more established concepts of wellbeing and workplace wellbeing. Therefore, unit one focused on introducing digital wellbeing, workplace wellbeing and wellbeing (figure 3.13).

Subunit A explored the concepts of digital wellbeing (JISC, 2019a; Gui, Fasoli & Carradore, 2017); wellbeing (Dodge *et al.*, 2012; Stoll, 2014); and workplace wellbeing (Bartels, Peterson & Reina, 2019; Hirschle & Gondim, 2020) through a presentation learning activity. The importance of digital wellbeing in the context of overall workplace wellbeing was also discussed to emphasise the rationale for engaging with the intervention. The model and definition of digital wellbeing developed for this study were introduced to emphasise the two aspects of digital wellbeing: managing the challenges of digital technologies to workplace wellbeing; and understanding the positive potential of digital technologies in the workplace.

Similarly, in section B, a presentation learning activity was most appropriate to introduce the contextual factors impacting digital wellbeing (Chartered Institute of Personnel & Development, 2020; JISC, 2022) and literature exploring the responsibility for digital wellbeing (Biggins & Holley, 2020; JISC, 2019a). These presentations were complemented by discussion learning activities where participants could share their own perspectives and develop their understanding of these factors relating to digital wellbeing. In Section C, an investigation learning activity was designed to encourage participants to explore a range of online resources relating to the concept of digital wellbeing provided on the VLE. This activity was designed to build on the initial introduction to key concepts in section A. Participants were invited to share their thoughts on the potential positive and negative impacts of digital technologies on wellbeing through a collaborative learning activity facilitated through a virtual collaboration tool - Moodle Board[8] (figure 3.12). This activity intended to build on the introduction of the model of digital wellbeing in the workplace in Section A.

[8] Moodle Board is an interactive learning activity available in the Moodle open source platform which allows users to collaboratively share text, photos, video and weblinks with fellow users.

Figure 3.12 Moodle Board activity

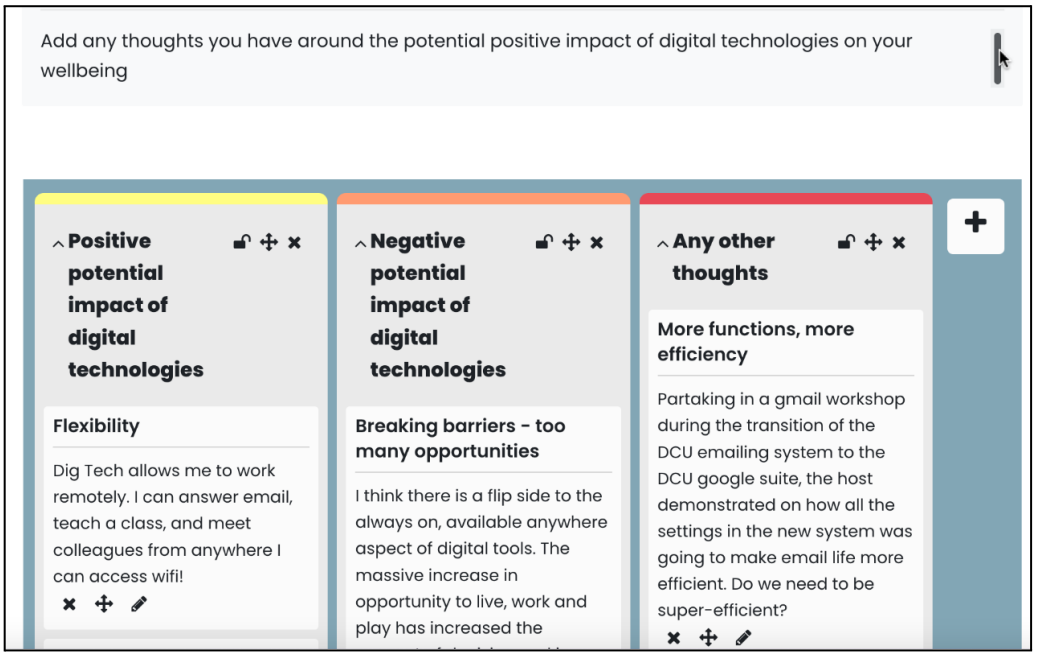


Figure 3.13 Unit 1 Storyboard: Understanding Digital Wellbeing

Unit	Section A (30 minutes):	Section B (30 minutes):	Section C (30 minutes) independent learning
Unit 1: Understanding Digital Wellbeing **Learning outcomes:** Understand digital wellbeing and related constructs wellbeing & workplace wellbeing. Understand contextual factors impacting on DWB: institutional culture; Covid-19 crisis and move to remote working. Understand that digital technologies have a potential positive or negative impact on wellbeing, and workplace wellbeing.	 Acquisition Presentation overview of digital wellbeing. Wellbeing (eudaimonic, hedonic); workplace wellbeing; digital wellbeing. Importance of addressing DWB in the workplace. Introduction of proposed model for digital workplace wellbeing. Illustrative example from literature of potential positive/negative impact of digital technologies on workplace wellbeing. Bordi *et al.*, (2018). Digital communication; -ve and +ve potential impact.  Discussion Activity 1: Vevox/poll How has the Covid Crisis changed your relationship with digital technologies?	 Acquisition Presentation focusing on the contextual factors impacting digital wellbeing (Chartered Institute of Personnel & Development, 2020; JISC, 2022)  Discussion Activity 2: breakout rooms: What can you influence in terms of digital wellbeing? What is out of your control?	 Production  Collaboration Identify one positive impact of digital technologies on workplace wellbeing and one potential negative impact. Collaborative online sharing space.  Investigation Explore the resources on wellbeing and digital wellbeing on the VLE.

3.4.4 Storyboarding unit two: understanding & managing work-home boundaries

Unit two was designed to develop participants' understanding of work-home boundaries, and to explore strategies to manage those boundaries effectively. In section A, the concept of work-home boundaries was introduced through a presentation learning activity (Nippert-Eng, 1996; Krause, 2018). The impact of blurred work-home boundaries on wellbeing was also discussed to build a case for addressing work-home boundaries (Cecchinato, Cox & Bird, 2015; Krause, 2018). A discussion learning activity built on this activity by inviting participants to reflect on the impact of work-home boundaries from a personal perspective through a Vevox[9] online poll.

In section B, boundary management theory (Kossek *et al.*, 2012; Nippert-Eng, 1996) was explored through an acquisition learning activity (presentation). Participants were then invited to share their experiences of managing work-home boundaries with colleagues through a discussion learning activity type. Strategies to manage work-home boundaries (Cecchinato, 2018; Rich, Aly & Cecchinato, 2020) were introduced through an acquisition learning type (presentation). Finally, participants were invited to reflect upon and discuss a Twitter post relating to work-home boundary management.

For section C, participants were invited to select one work-home boundary management strategy discussed in the live class, and practice applying this strategy independently. Participants were also asked to share any personal work-home boundary management strategies in an online collaborative learning space.

[9] Vevox is an online polling tool. Further information at https://vevox.app/

Figure 3.14 Unit 2 Storyboard: Understanding & Managing Work-home Boundaries

Using digital technologies to achieve workplace goals	Section A (30 minutes)	Section B (30 minutes)	Section C (30 minutes): Independent learning
Learning outcomes: Understand how digital technologies and related skills are necessary in today's workplace. Explore the potential uses of technology to support the achievement of workplace goals. workplace goals. Select one digital technology to apply in a new way in your practice to support your workplace goals and reflect on this application.	 Acquisition **Presentation:** Brief outline of how and why digital technologies and related skills are necessary aspects of the workplace. Explore research on potential of digital technologies to achieve workplace goals Bordi *et al,* Potter *et al.,* 2021) and suggestions for potential uses (JISC 2019a).  Discussion Reflect on your current use of digital technologies in the workplace. Are digital technologies and skills intrinsic in your working day?	 Acquisition DigComp Framework introduced as means to support digital skills and capabilities development. Explore current use of digital technologies in the workplace and new technologies.	 Investigation Explore the examples provided where digital technologies are matched with workplace goals. Do they resonate with your own workplace goals? Google doc of mini case studies (can add video clips later if possible/time allows). wellbeing.  Practice Identify one workplace goal for the coming week and how digital technologies might support that goal. Practice using the digital technology you have selected to support workplace goals in the coming weeks. Avail of technical support if required.  Production Use the digital wellbeing planner to plan how you will apply the learning from this intervention in practice.

àand

3.4.5 Storyboarding unit three: understanding & managing digital distractions & digital Overload

Unit three was designed to explore the concepts of digital distraction and digital overload. The unit also examines potential strategies for managing these challenges to workplace wellbeing. In section A, definitions of digital distraction (Carrier *et al.*, 2015; Lindström, 2020) and digital overload (Fasoli, 2021) were explored through an acquisition learning activity (presentation). The impact of digital distraction and digital overload was also discussed to establish a rationale for addressing these challenges (Carr 2011; Newport, 2016; Mark, Gudith & Klocke, 2008). This presentation was followed by a discussion learning activity which focused on the specific impact of the Covid-19 pandemic and move to remote working.

In section B, an acquisition learning activity (presentation) introducing the concept of multitasking was followed by a discussion learning activity where participants shared their perspectives on multitasking. This activity was extended to include a discussion of the impact of multitasking on creativity, scaffolded by a poem on multitasking and self-distraction. Strategies to manage digital overuse and digital distractions were also discussed.

In section C, participants were invited to select one strategy to manage digital distraction and digital overload to implement in practice, guided by a bespoke resource designed to support participants to plan the implementation of strategies to manage digital distraction and/or digital overload (Appendix E). This resource was adapted from a self-help guide produced as part of a research publication on social media and digital distractions (Alutaybi, Al-Thani, McAlaney & Ali, 2020). Participants were also offered an opportunity to set up their personal devices with support from the facilitator within the live timeslot.

Figure 3.15 Unit 3 Storyboard: Understanding & Managing Digital Distractions & Digital Overload

Digital Overuse & distraction	Section A (30 minutes)	Section B (30 minutes)	Section C (30 minutes) independent learning (Moodle)
Understand how digital overuse and distraction can impact on wellbeing in the workplace. Reflect on the experience of Covid-19 and remote working context in relation to digital technologies and how this impacted on work practices. Explore strategies to manage digital distractions in the workplace. Reflect on the digital detox as a strategy to manage digital overuse at work and whether this approach is practical in the modern workplace. Apply strategies to manage digital distractions and reflect on how these strategies work in practice.	 Acquisition Presentation on digital distraction and overload - key points from the literature (Carrier et al. 2015; Lindström, 2020; Fasoli, 2021). How digital overuse/distraction impacts on wellbeing and workplace wellbeing (Carr 2011; Newport, 2016; Mark, Gudith & Klocke, 2008).  Discussion During the Covid-19 crisis and remote working your use of technologies is likely to have increased. Do you consider this context has pushed you into 'digital overuse'? What, if any, are the positive aspects of remote working enabled by digital technologies.	 Acquisition Presentation on the concept of multitasking. Strategies for addressing digital overuse and distraction including: information ergonomics; the digital detox; screen free zones; screen time measurement tools.  Discussion Reflect on the impact of digital distractions on creativity - scaffolded by a poem (Mary Oliver).	 Practice Select one strategy to explore in the coming week in your practice. Set up your laptop/device/phone to enable management of digital overuse.  Production Use the Tiny habits planner to plan and record/track your use of these strategies over the coming week.

3.4.6 Storyboarding unit four: Understanding the positive potential of digital technologies in the workplace

Unit four was designed to explore the positive potential of digital technologies in the workplace. This unit provided an important balance with units two and three which explored the challenges presented by digital technologies to wellbeing.

In section A, the potential benefits of digital technologies were explored including flexibility (JISC, 2019b; Bordi *et al.,* 2018); increased autonomy (Potter *et al.*, 2021); improved collaboration (JISC, 2019b; Potter *et al.,* 2021); creating a positive online identity (JISC, 2019b); and fostering a sense of community (Reeve & Partridge, 2017). Participants were invited to discuss and share any positive experiences of digital technologies in the workplace.

In section B, the DigComp framework (Punie & Redecker, 2017) was introduced as a tool to support participants to understand and leverage the positive potential of digital technologies. The results of the pre-intervention survey question which identified those technologies currently in use by participants were presented regarding the DigComp framework categories of digital competences. A selection of technologies new to the group were presented and participants were invited to reflect upon the relevance of these technologies to their own context.

In section C, participants were encouraged to investigate the positive potential of digital technologies in practice by exploring a set of mini case studies. Participants were encouraged to select one digital technology to explore in practice.

In the final unit of learning, a short presentation drew the learning from all four units together. A bespoke digital wellbeing planner (Appendix F) adapted from a template developed as part of Digital skills: Succeeding in a Digital World (Open University, 2020) was shared on the VLE to support participants in planning to apply the learning from the workshops in the future. These exercises and supports were designed for participants' self reflection and therefore related data was not gathered for analysis for this study. One participant voluntarily submitted their digital wellbeing planner and therefore potentially such data may be of interest for future studies.

Figure 3.16 Unit 4 Storyboard: Understanding the Positive Potential of Digital Technologies

Understanding & Managing work-home boundaries	Section A (30 minutes):	Section B (30 minutes):	Section C (30 minutes) independent learning
Understand how digital technologies can impact work-home boundaries and the tensions between flexibility in the workplace and creating clear work-home boundaries. Explore strategies to manage work-home boundaries when using technology & using technology. Apply strategies in practice and reflect on how this process evolved.	 Acquisition Presentation of the concept of always on culture and work-home boundaries drawing on the literature (Nippert-Eng, 1996; Cecchinato, 2018). The impact of always-on culture was also explored.  Discussion Activity 2: "Technology has 'annihilated space and time as the two basic and inseparable connected dimensions for each social system." (Krause, 2018 p. 224). Discuss.	 Acquisition Presentation on boundary management theory (Kossek *et al.*, 2012; Nippert-Eng, 1996), and strategies to manage work-home boundaries (Cecchinato, 2018; Rich, Aly, Cecchinato *et al.,* 2020).  Discussion Activity 1:Twitter thread: work-home boundaries invaded. Explore this text and consider the strategies suggested to manage work-home boundaries through digital technologies. Discuss how these might work or not in your own context.	 Practice Select one thing that you will practise over the coming week to manage work-home boundaries e.g. something small like email sign off "Your hours and not my hours…"  Collaboration Share strategies that you already use to manage work-home boundaries? Collate the ideas into the Google jamboard so that the wider group can use it later.

3.5 Piloting & refining the intervention

A pilot intervention comprising a selection of learning activities from across the four units of learning workshops was delivered to a group of six colleagues[10] to inform the final intervention design. The workshop ran over ninety minutes and offered a flavour of each of the four units of learning. A brief Vevox survey was used to gather feedback on the pilot intervention (Appendix G). The survey comprised four questions exploring the value of workshop elements to participants' own context. All six participants reported that the workshop was useful in terms of their practice. The opportunity to reflect on digital wellbeing was welcomed, and the ninety-minute time-frame was described as "just right". The most useful aspects of the workshop were identified as: time and space to reflect on and discuss digital wellbeing; a safe space to discuss work-life balance issues; the openness of the conversations; and practical ideas to manage digital wellbeing. The focus on the positive aspect of digital wellbeing was described as 'uplifting'. Five suggestions were offered to improve the workshop: dedicated time to create personal to-do lists; tighter facilitation of the discussion learning activities; less focus on challenges of digital technologies; break out room discussions; and additional focus on practical strategies. The final learning design accommodated some, but not all, of these suggestions. The points relating to tighter facilitation and additional focus on practical strategies were taken on board in facilitating the intervention rollout. Instead of offering time to develop personal to-do lists, resources were created for participants to record their reflections while working independently (Appendices E & F). Breakout sessions were not considered practical given the small cohort sizes.[11] The pilot intervention drew on models of wellbeing and digital wellbeing from the literature, as the model of digital wellbeing in the workplace used in the final rollout of the intervention was still under development. The feedback offered contrasting opinions on the use of the PERMA model (Seligman, 2011) to scaffold discussions on general wellbeing. One participant wanted to learn more about the model, while another described it as "depressive". The JISC (2019a) digital wellbeing model did not garner any comment. These mixed reactions to existing models of wellbeing and digital

[10] Colleagues participating in the pilot have roles as academic developers, learning technologists, and virtual learning environment (Moodle) support.

[11] Cohort one comprised seven participants, cohort two comprised ten participants.

wellbeing reinforced the value of creating a model specifically relating to digital wellbeing in the workplace.

3.6 Continued refinements during the intervention roll-out

The structure of the digital wellbeing intervention was revised throughout the rollout period based on participant feedback and issues arising for participants. To take one example, in the original structure, unit two focused on the positive potential of digital technologies. However, during the delivery of unit one for cohort one, participants suggested that work-home boundary management was a particular priority for them at that moment in time. This may have related to the timing of the delivery of this series of workshops during the ongoing pandemic and remote working context. The work-home boundary unit was therefore moved forward in the schedule. A second example of adjustments made based on participant feedback was the move away from online polls. Vevox polls were initially designed to support free discussion should participants feel uncomfortable sharing specific perspectives within the group. However, the intervention participants engaged in the discussion learning activities very freely and therefore the polls were replaced with live group discussion activities in some instances.

It was planned to offer the intervention in hybrid mode to facilitate maximum flexibility for participants as the cohorts worked across different sites across the university, while also allowing participants to attend in a face-to-face context should they prefer. However, the Covid-19 pandemic and resulting remote working conditions continued to fluctuate during the rollout period and so the intervention was delivered completely online.

Chapter 4: Methodology

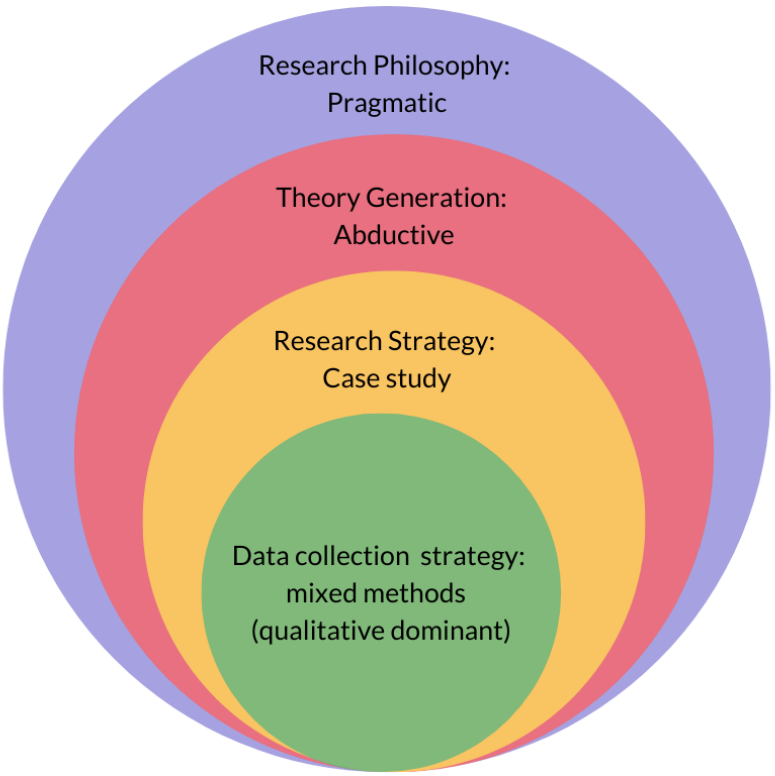
This chapter outlines the key decisions relating to the research methodology using Saunders, Lewis & Thornhill's (2007) research onion framework and offers a detailed discussion of the research design process.

4.1 The Methodological Approach: key decisions

4.1.1 Introduction

Saunders, Lewis & Thornhill (2007) compare the research design process to peeling an onion layer by layer. Each layer of the research design "onion" requires a decision by the researcher, and each decision in turn influences the subsequent research design decision. The key research design decisions for this study is represented in figure 4.1 using an adapted version of the research onion.

Figure 4.1 Research methodology and design process
Adapted from the Research Onion Framework (Saunders, Lewis & Thornhill, 2007)



4.1.2 Researcher's philosophy: Pragmatism

The first decision point was to determine the research philosophy to guide the study. It is generally accepted in the literature that a researcher must articulate philosophical assumptions when designing and presenting a research study (Crewsell, 2014; Denscombe, 2010; Creswell & Plano Clark, 2017). The articulation of the researcher's philosophical stance allows the reader to interpret the research with full knowledge of the researcher's assumptions which have influenced the research process. The philosophical stance taken by the researcher for this study is that of pragmatism, a philosophical stance that acknowledges the complexity of social phenomena, and the need to draw upon any research strategy that serves the research question/s (Creswell & Plano Clark, 2017). The pragmatic philosophy was considered a suitable approach for this study, as digital wellbeing is an emerging and complex social phenomenon which requires a research philosophy that draws on any research strategy that serves the complex research questions. When engaging with a pragmatic research philosophy, the researcher's values (axiology) are understood as inseparable from the research process (Onwuegbuzie & Combs, 2011). The researcher's role in supporting staff to use digital technologies in their teaching and learning has led to a largely positive view of digital technologies in the higher education workplace. However, the researcher has also long been influenced by critical analysis of educational technology that questions assumptions around digital technologies enhancing education (Bayne, 2015; Facer & Selwyn, 2021). Furthermore, working to support staff use of digital technologies also offered the researcher an insight into the potential negative impact of digital technologies on staff wellbeing and led to the focus of this research study.

4.1.3 Theory generation: an abductive approach

An abductive approach to theory generation draws on both deductive and inductive theory generation strategies. An inductive theory generation strategy is characterised as creating theory by moving from the specific to the general (Creswell, 2014) and is usually associated with qualitative research methods. A deductive, or theory driven approach, involves testing a hypothesis usually by gathering quantitative data (ibid.). Kennedy (2018) describes the role of researchers using an abductive approach as "like the fictional detective Sherlock Holmes, they constantly move back and forth between data and theories, and make comparisons and interpretations in searching for patterns and the best

possible explanations" (p.5). An abductive approach to theory generation connects to the pragmatic research philosophy by drawing on all available tools to address the research questions, in this case by drawing on both qualitative and quantitative data collection and data analysis methods.

4.1.4 Research strategy: case study

There were three key advantages to using a case study strategy for this research study. First, an exploration of the phenomenon of digital wellbeing is well served by a case study strategy as digital wellbeing is understood as a complex phenomenon (Vanden Abeele, 2020; Burr & Floridi, 2020; JISC, 2019a; Dennis, 2021). Yin (2013), one of the seminal writers on case study research, defines the case study as: "an in-depth inquiry into a specific and complex phenomenon (the 'case'), set within its real-world context" (p.321). Following this definition, a case study strategy allowed for the exploration of the complex phenomenon of digital wellbeing in the real-world context of the higher education workplace.

Second, the case study was advantageous in that it draws legitimacy from experience rather than theory (Thomas, 2019). While further theoretical work has emerged over the course of this study (Vanden Abeele, 2020; Büchi, 2021; Dennis, 2021; Vanden Abeele & Nguyen, 2022), a limited body of theoretical literature was available at the starting point of this study in June 2020.

Finally, the case study strategy is described as facilitating the collection of data from multiple sources to explore the 'how' and 'why' of research questions (Yin, 2009; Creswell, 2014), and to allow the examination of a phenomenon from a range of perspectives (Thomas & Myers, 2015), thus reflecting the pragmatic research philosophy underpinning the research study methodology.

4.1.5 Data collection strategy: a mixed methods approach

A simple definition of the mixed methods research approach is "research that involves collecting, analyzing, and interpreting quantitative and qualitative data in a single study or in a series of studies that investigate the same underlying phenomenon" (Leech & Onwuegbuzie, 2010; p. 267). By drawing on both qualitative and quantitative data, a mix

of data collection methods approach allows for qualitative and quantitative data to be "combined in order to 'complement' the advantages and disadvantages present within each" (Shannon-Baker, 2016, p. 325) and therefore connects to the pragmatic research philosophy adopted by the researcher.

A quantitative instrument was designed to gather data in respect of participants' perceptions of digital technologies prior to and post participation in the digital wellbeing intervention to measure the impact of the digital wellbeing intervention. The qualitative data was gathered through open questions included in the post-intervention survey and through focus group interviews.

Surveys are considered useful to collect data relating to attitudes, opinions, behaviours or characteristics of respondents, and have also been widely used to measure the impact on attitudes, behaviours and beliefs of professional learning for staff in education (Creswell, 2014). This study relates to behaviours with, and attitudes to, digital technologies, and the impact of a digital wellbeing intervention in the form of professional learning for staff in a higher education context. For these reasons a survey instrument was considered a suitable data collection method.

A focus group is a "group of people with certain characteristics generating narrative data in a focused discussion" (Curry 2015, no page number). A focus group differs from individual interviews in that the group dynamic and interaction are essential aspects of this data collection method, or as described by Barbour & Kitzinger (1999), "any group discussion may be called a focus group as long as the researcher is actively encouraging of, and attentive to, the group interaction" (p. 20). There are three main advantages to using focus groups as a data collection method; social interaction, the emic nature of the data collected, and the range of data produced at individual, group and interaction level (Cyr, 2019). The social nature of the focus group interview allows the researcher to gain an in-depth understanding of a phenomenon by facilitating a discussion around perspectives, experiences and practices of participants (Barbour, 2018). Furthermore, the focus group structure mimics the way that individuals form opinions (Cyr, 2019). The group dynamics and interaction present an opportunity to broaden the range of responses by activating forgotten details of experiences within the group (Curry, 2015; Morgan, 2019). The group process can also release inhibitions for participants as others share opinions and

perspectives (Curry, 2015), and enriches the data by offering an opportunity to share and compare perspectives, and reveal social or institutional norms on a particular phenomenon (Curry, 2015; Robinson, 2019). For these reasons the focus group interview was considered a suitable approach to investigate digital wellbeing.

4.2 Research Design

4.2.1 Defining the case

One of the key challenges discussed in the literature on case study is that of defining the case. Stake (1995) stresses the importance of bounding a case, arguing that a 'case study' is not a research strategy but rather the selection of an object (or phenomenon) of research. Thomas & Myers (2015) concur, describing a case as an instance of a particular phenomenon providing an analytical frame to illuminate that phenomenon. Drawing on these analyses, the case for this study was bounded in the first instance by the phenomenon being explored - the impact of a digital wellbeing intervention on staff in a higher education context. Therefore the case was also bounded by the timeframe of the delivery of the intervention and the data collection timing. As the study aimed to evaluate the impact of the digital wellbeing intervention on behaviour change and not just knowledge acquisition, Guskey's (2002) advice regarding the evaluation of professional development was drawn upon to ensure that ample time was allowed between the delivery of the intervention and the post-intervention data collection so that "enough time must pass to allow participants to adapt the new ideas and practices to their settings" (p.6). The unit of analysis is the impact of the digital wellbeing intervention on the participants.

4.2.2 A single holistic case study design

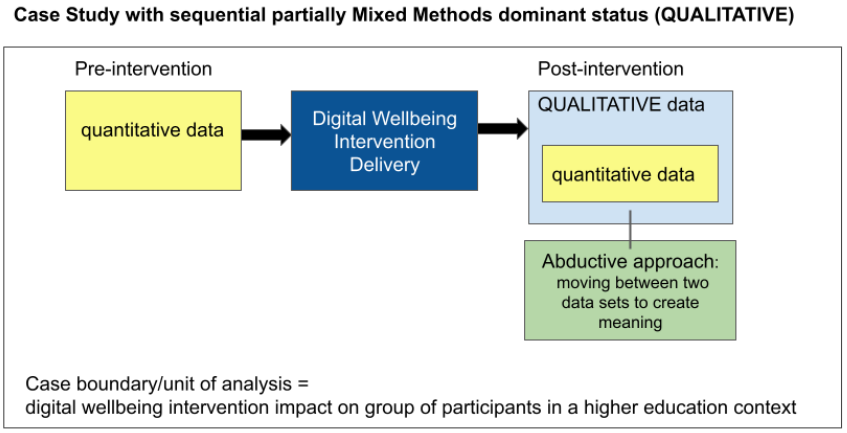
There are two additional decisions to make in relation to the case study research design. The research can involve a single or multiple cases and a case study can be either embedded or holistic (Guetterman & Fetters, 2018). In the case of this study, the research design involves a single case study as it focuses on one single case of the impact of a digital wellbeing intervention on participants in a higher education context. The case study can be described as a holistic case study as the study focuses on a global level unit of

analysis, i.e. the impact of a professional development intervention relating to digital wellbeing on a group of participants.

4.2.3 A mixed methods approach to data collection and analysis (Qualitative dominant)

The research design of this case study follows that described by Guetterman & Fetters (2018) where a mixed methods approach to data collection is nested within a "parent" case study design (CS-MM). In this study each research question is addressed by gathering and analysing qualitative and quantitative data. Quantitative methods were used to gather data on staff perspectives of digital technologies, and their workplace wellbeing prior to participating in the digital wellbeing intervention. Quantitative methods were also used to gather data post-intervention with the aim of determining the impact of the digital wellbeing intervention. Qualitative methods were used to explore in more depth participants' perceptions of digital wellbeing, workplace wellbeing and the impact of the digital wellbeing intervention. The data analysis followed a parallel abductive approach where the researcher moved between the two data sets to create meaning.

Figure 4.2 Holistic single case study with a mixed methods data collection approach (Concurrent, partially mixed dominant status qualitative)



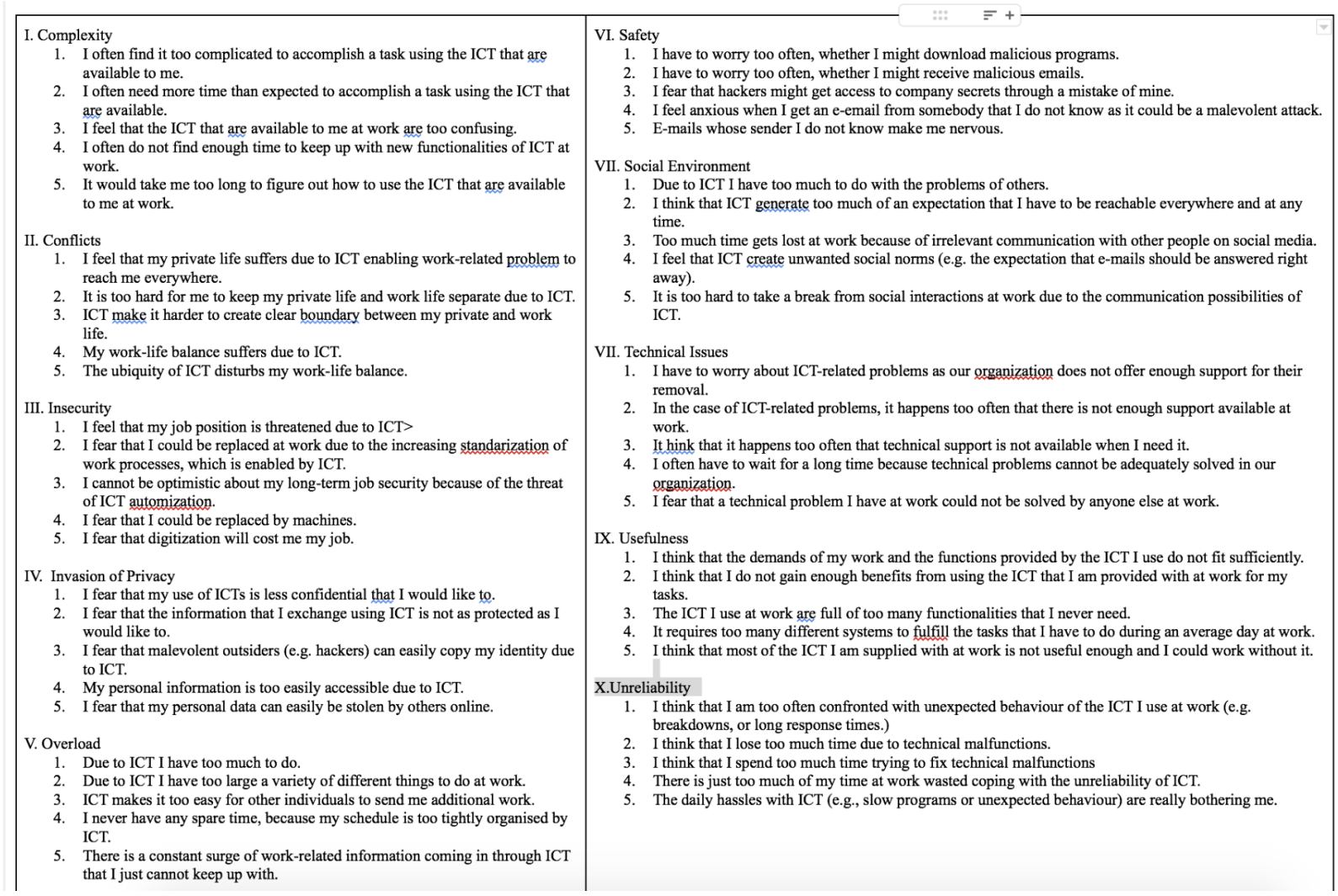
4.2.4 Data collection instruments: the survey

4.2.4.1 Evaluating existing survey instruments

Validating an instrument as part of this research study was considered outside the scope of this study. At the time of the survey design, an instrument to measure digital wellbeing was not yet available. However, validated instruments were available to measure general wellbeing, workplace wellbeing, and wellbeing in a digital context, and these were examined to determine suitability for this study. Ong *et al.* (2021) suggest that using general wellbeing instruments to measure wellbeing in the online context may result in skewed findings as wellbeing indicators designed to measure general wellbeing may be experienced differently in the online context. While this study does not focus solely on participants' experience of digital technologies within an online environment, these concerns are relevant in examining attitudes to, and behaviours with digital technologies more broadly. Taking one example, the Warwick-Edinburgh Wellbeing Scale (WEWBS), a well known and widely used general wellbeing instrument, includes the indicator "I've been feeling connected to others" (Tennant, R., Hiller, L. & Fishwick, 2007). In the workplace context, connectedness may not always be a positive indicator of wellbeing, particularly if there are issues around work-home boundaries. For this reason a general wellbeing instrument was not considered appropriate for this study.

As a general wellbeing instrument was not considered appropriate for the study, the next step was to examine instruments specific to digital technologies. The Digital Stressors Scale (DSS) developed by Fischer, Rueter & Reidel (2021) builds on previous work (Ragu-Nathan *et al.*, 2008) in relation to techno-stress in the workplace. The DSS measures stress related to the use of digital technologies and consists of fifty dimensions across ten categories of potential stressors within the workplace context: complexity, conflicts, insecurity, invasion of privacy, overload, safety, social environment, technical support, usefulness, and unreliability (figure 4.4).

Figure 4.3 The Digital Stressors Scale (DSS)



I. Complexity
1. I often find it too complicated to accomplish a task using the ICT that are available to me.
2. I often need more time than expected to accomplish a task using the ICT that are available.
3. I feel that the ICT that are available to me at work are too confusing.
4. I often do not find enough time to keep up with new functionalities of ICT at work.
5. It would take me too long to figure out how to use the ICT that are available to me at work.

II. Conflicts
1. I feel that my private life suffers due to ICT enabling work-related problem to reach me everywhere.
2. It is too hard for me to keep my private life and work life separate due to ICT.
3. ICT make it harder to create clear boundary between my private and work life.
4. My work-life balance suffers due to ICT.
5. The ubiquity of ICT disturbs my work-life balance.

III. Insecurity
1. I feel that my job position is threatened due to ICT>
2. I fear that I could be replaced at work due to the increasing standarization of work processes, which is enabled by ICT.
3. I cannot be optimistic about my long-term job security because of the threat of ICT automization.
4. I fear that I could be replaced by machines.
5. I fear that digitization will cost me my job.

IV. Invasion of Privacy
1. I fear that my use of ICTs is less confidential that I would like to.
2. I fear that the information that I exchange using ICT is not as protected as I would like to.
3. I fear that malevolent outsiders (e.g. hackers) can easily copy my identity due to ICT.
4. My personal information is too easily accessible due to ICT.
5. I fear that my personal data can easily be stolen by others online.

V. Overload
1. Due to ICT I have too much to do.
2. Due to ICT I have too large a variety of different things to do at work.
3. ICT makes it too easy for other individuals to send me additional work.
4. I never have any spare time, because my schedule is too tightly organised by ICT.
5. There is a constant surge of work-related information coming in through ICT that I just cannot keep up with.

VI. Safety
1. I have to worry too often, whether I might download malicious programs.
2. I have to worry too often, whether I might receive malicious emails.
3. I fear that hackers might get access to company secrets through a mistake of mine.
4. I feel anxious when I get an e-email from somebody that I do not know as it could be a malevolent attack.
5. E-mails whose sender I do not know make me nervous.

VII. Social Environment
1. Due to ICT I have too much to do with the problems of others.
2. I think that ICT generate too much of an expectation that I have to be reachable everywhere and at any time.
3. Too much time gets lost at work because of irrelevant communication with other people on social media.
4. I feel that ICT create unwanted social norms (e.g. the expectation that e-mails should be answered right away).
5. It is too hard to take a break from social interactions at work due to the communication possibilities of ICT.

VII. Technical Issues
1. I have to worry about ICT-related problems as our organization does not offer enough support for their removal.
2. In the case of ICT-related problems, it happens too often that there is not enough support available at work.
3. It hink that it happens too often that technical support is not available when I need it.
4. I often have to wait for a long time because technical problems cannot be adequately solved in our organization.
5. I fear that a technical problem I have at work could not be solved by anyone else at work.

IX. Usefulness
1. I think that the demands of my work and the functions provided by the ICT I use do not fit sufficiently.
2. I think that I do not gain enough benefits from using the ICT that I am provided with at work for my tasks.
3. The ICT I use at work are full of too many functionalities that I never need.
4. It requires too many different systems to fulfill the tasks that I have to do during an average day at work.
5. I think that most of the ICT I am supplied with at work is not useful enough and I could work without it.

X.Unreliability
1. I think that I am too often confronted with unexpected behaviour of the ICT I use at work (e.g. breakdowns, or long response times.)
2. I think that I lose too much time due to technical malfunctions.
3. I think that I spend too much time trying to fix technical malfunctions
4. There is just too much of my time at work wasted coping with the unreliability of ICT.
5. The daily hassles with ICT (e.g., slow programs or unexpected behaviour) are really bothering me.

The validation process for the DSS found that each category of questions within the DSS can operate as separate and valid instruments (Fischer, Rueter & Reidel, 2021). This validation was particularly useful in the context of this study as four of the categories relate to two of the research questions. In relation to research question 1 - Can/how can a digital wellbeing intervention support staff to manage the challenges presented by digital technologies in the specific context of higher education? - three categories of the DSS were relevant. Category II of the DSS comprises questions relating to the challenges presented by digital technologies in managing work-home boundaries. Category V comprises questions relating to work overload created by digital technologies and is therefore considered a useful set of questions to collect data in relation to the impact of digital overload. Category VII comprises questions relating to the stress created by digital technologies in relation to the social work environment, therefore these questions are useful in measuring what is referred to as 'digital distraction' in the literature (Mark *et al.,* 2015). The DSS Category IX addresses the usefulness (or not) of digital technologies and therefore was considered an appropriate scale for collecting data in relation to research question 2 - Can/how can a digital wellbeing intervention support staff to understand the positive potential of digital technologies in the specific context of higher education?

To address research question 3 - Can/how can a digital wellbeing intervention impact workplace wellbeing in the specific context of higher education? - an instrument was required to measure workplace wellbeing prior to and post-intervention. The Eudaimonic Workplace Wellbeing Scale (EWWS) measures eudaimonic workplace wellbeing across two broad categories: interpersonal and intrapersonal (Bartels, Peterson & Reina, 2019). The scale covers eight dimensions of workplace wellbeing: collegiality, workplace relationships, connection, friendships, emotional energy, purpose, work satisfaction, and professional development. See full detail in figure 4.5 below.

Figure 4.4 Eudaimonic Workplace Wellbeing Scale (Bartels, Peterson & Reina, 2019)

DIRECTIONS: This portion of the survey consists of a number of statements that may describe how you feel **within your workplace**.

Please indicate your agreement with the following statements.

(1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree)

Interpersonal dimension

1. Among the people I work with, I feel there is a sense of brotherhood/sisterhood
2. I feel close to the people in my work environment
3. I feel connected to others within the work environment
4. I consider the people I work with to be my friends

Intrapersonal dimension

5. I am emotionally energized at work
6. I feel that I have a purpose at my work
7. My work is very important to me
8. I feel I am able to continually develop as a person in my job

The rationale for developing a scale specifically for workplace wellbeing was that "the workplace represents a unique context and wellbeing in one context does not always translate to another." (ibid, p. 14). The eudaimonic focus of the instrument is designed to complement instruments that measure hedonic aspects of workplace wellbeing. The suggestion to combine the EWWS scale with another instrument that measures hedonic aspects of wellbeing is useful in the context of this study, as the literature review underpinning this study suggests that wellbeing, and therefore digital wellbeing, should be framed from both a hedonic and eudaimonic perspective (Ryan & Deci, 2001).

4.2.4.2 Survey design

The survey was designed to address each of the three research questions for this study. Four categories of the DSS instrument were combined with the EWWS to measure digital stress/the impact of the challenges presented by digital technologies (research question #1), the usefulness of digital technologies (research question #2), and the workplace wellbeing of participants (research question #3). As the validation process for the overall DSS found that each category could be used as an independent survey, three categories of the scale were used to collect data relating to the challenges presented by digital technologies in the

workplace: work-home boundaries (category V - conflicts), digital overload (category X - overload), and digital distractions (Category VII - social environments). Category IX of the DSS was used to collect data relating to the perceived usefulness of digital technologies which is the data informing research question #2.

The EWWS is a validated instrument for measuring eudaimonic workplace wellbeing and was therefore used to collect data to address research question #3, Can/how can a digital wellbeing intervention impact workplace wellbeing in the specific context of higher education?' As the EWWS was validated as an entire instrument, all eight statements within the instrument were used in the survey. The language in some of the statements was adjusted to reflect the cultural context of Irish higher education. In developing the EWWS, the authors suggested that the scale could complement a scale which measures the hedonic aspect of workplace wellbeing. The DSS is designed to gather data on the negative impact or stress of digital technologies on workplace wellbeing, and therefore can be described as a hedonic digital wellbeing instrument. Combining the EWWS with four categories of the DSS eudaimonic instrument for this study strengthened the instrument by measuring both the hedonic and eudaimonic dimensions of workplace wellbeing.

The DSS and the EWWS were constructed using likert type questions. Denscombe (2010) suggests that a mix of positive and negative likert scales should be used in a survey to avoid automated responses from participants. This mix of positive and negative Likert scales occurred naturally in this survey design as the DSS uses negative Likert scale questions and the EWWS uses positive Likert scale questions. The literature is divided in terms of the correct number of options on a Likert scale. It is argued that an odd number of options skews the data as respondents are likely to take the easy middle ground if in doubt (ibid.). On the other hand, a middle ground may truly reflect the respondent's attitude/belief/behaviour (Muijs, 2004). In addition, a five-point scale can be considered too narrow for respondents, and a seven-point scale can be considered too nuanced and confusing (ibid.). The EWWS uses a five-point likert scale and the DSS a seven-point likert scale, so when combined in one survey offer a level of balance.

Likert type question responses are limited to pre-formulated options which can be frustrating to respondents (Denscombe, 2010; Creswell, 2014). The inclusion of an 'other' option within closed questions is described by Muijs (2004) as remedying this issue to a

limited extent, as respondents are likely to be influenced by the pre-formulated responses. Therefore, completely open questions were also included in the survey to provide an opportunity to comment beyond the influence of pre-formulated answers.

4.2.4.3 Constructing the survey instrument to ensure validity and reliability

The survey was constructed from existing instruments that were validated: the EWWS (Bartels, Peterson & Reina, 2019) and the DSS (Fischer, Rueter & Reidel, 2021). In addition, several steps were taken in the construction of the survey to ensure the reliability of the instrument for this study.

The survey was designed using Qualtrics software,[12] which is the standard survey design tool used at the research site, and approved by the research ethics committee. Qualtrics also collects data in a format that is easy to analyse. Toepoel (2016) suggest that visual design affects respondents' answers and these factors were facilitated easily through the Qualtrics interface. For example, each answer option was afforded the same visual emphasis. The visual midpoint of the likert scales reflected the conceptual midpoint. Instructions were placed directly in front of the answer options to ensure that respondents did not have to put effort into reading them. Gratuitous visual language such as pictures and colours were not used.

Following the advice of Creswell (2014) who describes good survey questions as clear and unambiguous, the language for all questions was examined carefully and adjustments were made based on this examination. Two changes were made. The Digital Stressor Survey (DSS) instrument uses the term ICT. While ICT is commonly considered as a synonym for digital technologies, the term ICT was replaced with the term 'digital technologies' for those questions to avoid any ambiguity. Question one of the EWWS, "Among the people I work with, there is a sense of brotherhood/sisterhood", is potentially culturally dissonant in an Irish context and so the term 'sisterhood/brotherhood' was replaced with 'collegiality'.

Every effort was made in the survey design to encourage a high response rate. Instructions were carefully constructed for each question (Denscombe, 2010) and refinements were made following the pilot process. Denscombe (ibid.) suggests that the researcher needs to

[12] Qualtrics is a survey software package. More information at https://www.qualtrics.com

"walk a tightrope between ensuring coverage of all the vital issues and ensuring the questionnaire is brief enough to encourage people to answer it" (p. 162). The pilot process invited respondents to comment on survey length.

The pre-intervention survey was administered just in advance of the intervention roll out in order to collect data from participants in relation to digital wellbeing immediately before participating in the digital wellbeing intervention. The timing of the post-intervention survey follows the advice of Guskey (2002) who suggests that "enough time must pass to allow participants to adapt the new ideas and practises to their settings" (p. 6). The post-intervention survey was administered eight-twelve weeks[13] after participation in the digital wellbeing intervention.

4.2.4.4 Piloting the survey

The importance of piloting a survey is well established in the literature (Oppenheim, 1998, Peterson, 2000; Bell, 2005; Creswell, 2012). A pilot ensures that participants within the sample can understand and answer the questions (Creswell, 2012). The draft survey was piloted with colleagues in the researcher's direct unit. Feedback was requested on a range of issues including: typos; clarity of questions and question instructions; issues with language e.g. cultural sensitivities or plain language issues; issues relating to inclusivity/accessibility in terms of the survey instrument; timing for completion; missing questions; and superfluous questions. Feedback from the pilot was used to adapt the survey instrument before presentation to participants. In general the reviewers found that the survey was clear and concise and that the instructions were easy to follow. The adjustments adopted included: clarification in relation to some of the terminology used throughout the survey, the addition of some in-house digital technologies to the list of digital technologies in the pre-intervention survey, and adjustment of language relating to workplace wellbeing questions. There were some suggestions from reviewers which were considered by the researcher but not adopted in the revised survey, and where this happened, the researcher recorded the rationale (Appendix H).

[13] While the post-intervention surveys were circulated to participants four weeks after the completion of each roll out of the digital wellbeing intervention, the focus groups were conducted in March/April 2022. Therefore the gap between the intervention rollout and the focus group data collection varied depending on the cohort as the first cohort completed the intervention in December 2021 and the second cohort completed the intervention in February 2022.

4.2.5 Focus group design

Participants of the digital wellbeing intervention were invited to take part in focus groups eight to twelve weeks after taking part in the intervention. The time delay follows Guskey's (2002) rationale of allowing participants some time to explore and/or apply strategies to manage digital wellbeing in their practice.

A semi-structured interview approach was taken to allow the researcher to combine a level of pre-planning and flexibility in the interview process. The schedule was designed with reference to the literature which suggests that no more than 8-12 questions be used (Curry, 2015). In addition to the focus group interview schedule, probes were prepared to stimulate and build the discussion during the interviews. Free probes were also prepared in advance including pre-prepared probing questions which are included in the focus group interview schedule (Appendix J), and also what are described as 'free probes', such as "who has more to add?" (Morgan, 2019).

In addition to the informed consent form and plain language statement providing information to participants on the focus of the interview, the researcher began the focus group interviews by briefly introducing the aim of the study and outlining the process and questions designed to guide the focus group interview. An opening question relating to the digital wellbeing intervention was used to encourage participants to relax into the process. This initial question was followed by four questions relating to digital wellbeing and workplace wellbeing. The questions made reference to pre-intervention survey findings to explore the quantitative data in more depth. When preparing the questions, the researcher read aloud the questions to check if they were conversational and suitable for a focus group discussion (Curry, 2015). Leading questions were avoided to allow the participants to shape the discussion. Each focus group interview was conducted online due to the ongoing Covid-19 pandemic and the ongoing transitions between remote working and on campus working at the time of data collection (March-April 2022). The interviews were scheduled to last approximately one hour but ran over by several minutes in each case.

The recommended size of focus groups of five-ten participants (Curry, 2015) was followed. Fewer than five participants can result in a flatter discussion and more than ten is too difficult to manage. Ten participants opted to participate in the focus groups. To allow

some flexibility for participants two time slots were offered and the group naturally split into a group of four participants, and a group of six participants based on participant availability.

Moderator skills are considered essential to successful focus group discussion. Morgan (2019) suggests that it is useful to think of the moderator as a 'facilitator', a role that supports the discussion but places the moderator very much outside of the actual discussion. The moderator's role is to allow the group to lead the discussion but to step in and refocus the discussion towards the research questions if necessary (Morgan, 2019). The semi-structured approach adopted in this research design worked towards addressing this challenge. The moderator used probes to refocus and develop the discussion at points during the interview. Non-verbal encouragement was also used as a strategy to support the discussion such as nodding for positive encouragement. As the online environment is limited in terms of non-verbal communication, the facilitator adopted other advice in the literature such as redirecting eye contact to others in the group when one person dominated the discussion (ibid.) or by simply calling on others to get involved in the conversation. Specifically, a limitation of the online environment arose when one participant's video was not functioning. For a period of time, the participant was not involved in the conversation as the visual cue to get involved was unavailable. Once the researcher realised this was the case, the participant was invited verbally to join the conversation and to use the emoticons to indicate a desire to speak. The moderator drew on the focus group literature by remaining as neutral as possible and refraining from sharing a personal point of view (Curry, 2015). Instead, the researcher allowed the questions to 'drop like a pebble' (ibid.; no page number), and observe the ripple effect throughout the group. This approach allowed the researcher to collect an 'emic' or outsider perspective from the group discussion, one of the key advantages of the focus group data collection method (Cyr, 2019).

4.3 Sampling

4.3.1 Sampling strategy

Sampling refers to the process of selecting those within a population that you will invite to complete the survey (Creswell, 2012) and in theory allows the researcher to present accurate findings from a population without collecting data from the entire population (Denscombe, 2010). A simple random sampling approach was applied at the recruitment stage for the digital wellbeing intervention as such a strategy "ensures that there is no scope for the researcher to influence the sample in some way that will introduce bias" (Denscombe, 2010; p. 27). All staff at the research site were invited to participate in the intervention and research study.

All participants who signed up for the digital wellbeing intervention were invited to complete the pre-intervention survey to gather data relating to their workplace wellbeing and digital wellbeing. Those participants who completed the digital wellbeing intervention were invited to complete the post-intervention survey which was a repeat of the pre-intervention survey with the intention of measuring the impact of participating in the intervention on workplace wellbeing and digital wellbeing. All participants who completed the intervention were also invited to take part in focus group interviews post-intervention to gather qualitative data in respect of the impact of the intervention and to elaborate on the quantitative data.

4.3.2 Participant Profile

An invitation to take part in the digital wellbeing intervention was circulated to all staff at the research site through gatekeepers, namely heads of units or heads of schools within the University. Eight participants signed up for the first rollout (November-December 2021); and eleven participants chose to participate in the second rollout (January-February 2022). One participant dropped out of each cohort before attending any of the workshops. Overall attendance at the workshops was high (figures 4.6 & 4.7). One participant from cohort #1 attended workshop #4 in the second rollout. Fifteen participants identified as female, while two identified as male (figure 4.8).

Figure 4.5 Attendance rollout cohort #1 (November - December 2021)

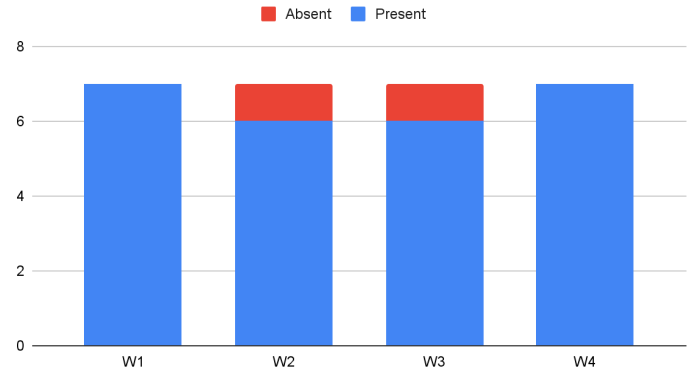


Figure 4.6 Attendance rollout cohort #2 (January - February 2022)

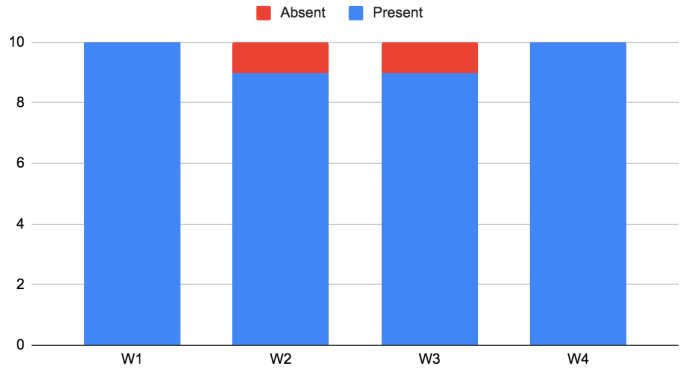
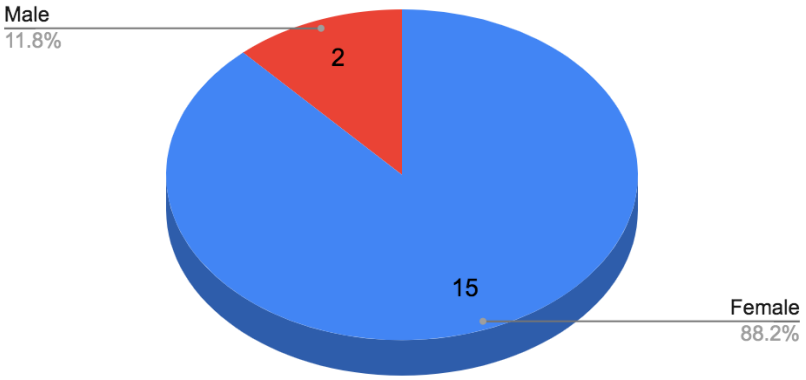


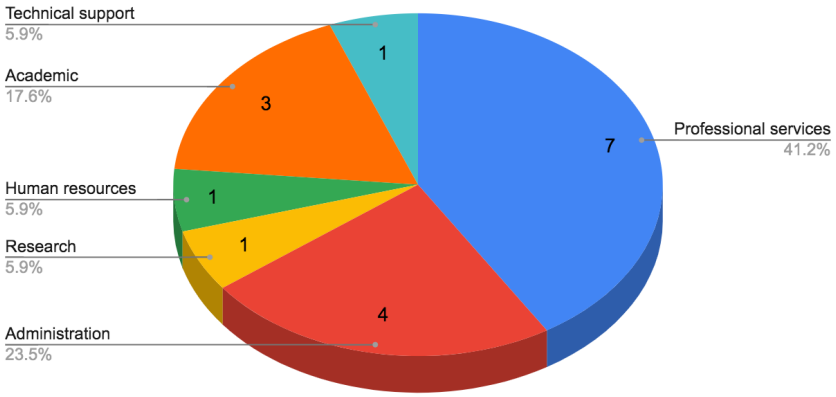
Figure 4.7 Gender breakdown of participants



Participants' roles within the university covered a broad spectrum (figure 4.9). The majority of participants worked in professional services which includes library services, academic development, learning technologists and information systems support. Human resources, administration staff, academics and researchers were also represented. While the

sample is not representative of the entire university, the mix of roles offered a range of perspectives in relation to digital wellbeing.

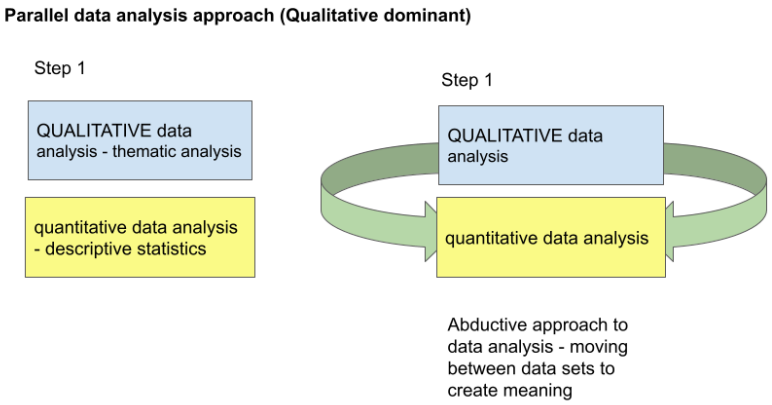
Figure 4.8 Breakdown of participants by role



4.4 Data analysis

While the study did not follow a fully mixed methods design, the data analysis was designed with reference to the parallel data analysis approach outlined by Creswell & Plano-Clarke (2017). Each data set was analysed separately using appropriate methods, and subsequently the data sets were integrated with reference to the research questions (figure 4.10).

Figure 4.9 Parallel data analysis followed by abductive theory generation



4.4.1 Quantitative data analysis

The quantitative data analysis was designed originally to include both descriptive and inferential analysis. It was planned to conduct paired t-tests to determine whether the

digital wellbeing intervention had a statistically significant impact on the workplace wellbeing and/or digital stress of participants. A paired t-test was considered an appropriate statistical test, as such a test can be used to compare the mean value between a group prior to and after participating in an intervention (Knapp, 2017). However, the usable response rate for the pre-intervention survey was fifteen and the post intervention fourteen, meaning that a t-test was not a viable option. The non-parametric Wilcoxon Signed-Rank Test was also considered as an alternative statistical test. Again, due to the small sample size, any inferential analysis would have limited meaning (ibid.). Therefore the quantitative data analysis comprised descriptive statistics only. Descriptive statistics are "techniques that are used to organise and summarise data for the purpose of enhancing understanding" (Tashakkori & Teddlie, 2010: p. 7). While the descriptive statistics cannot make inferences for a more general population, they are useful in presenting the patterns within the study sample.

To generate descriptive statistics, the datasets collated in Qualtrics were extracted to Microsoft Excel in order to present the data in tabular and chart formats. The data were organised and summarised into graphical representations of the frequency for responses to the Likert type questions, both prior to and post participating in the digital wellbeing intervention. These descriptive statistics are discussed in detail in chapter 5.

4.4.2 Qualitative data analysis

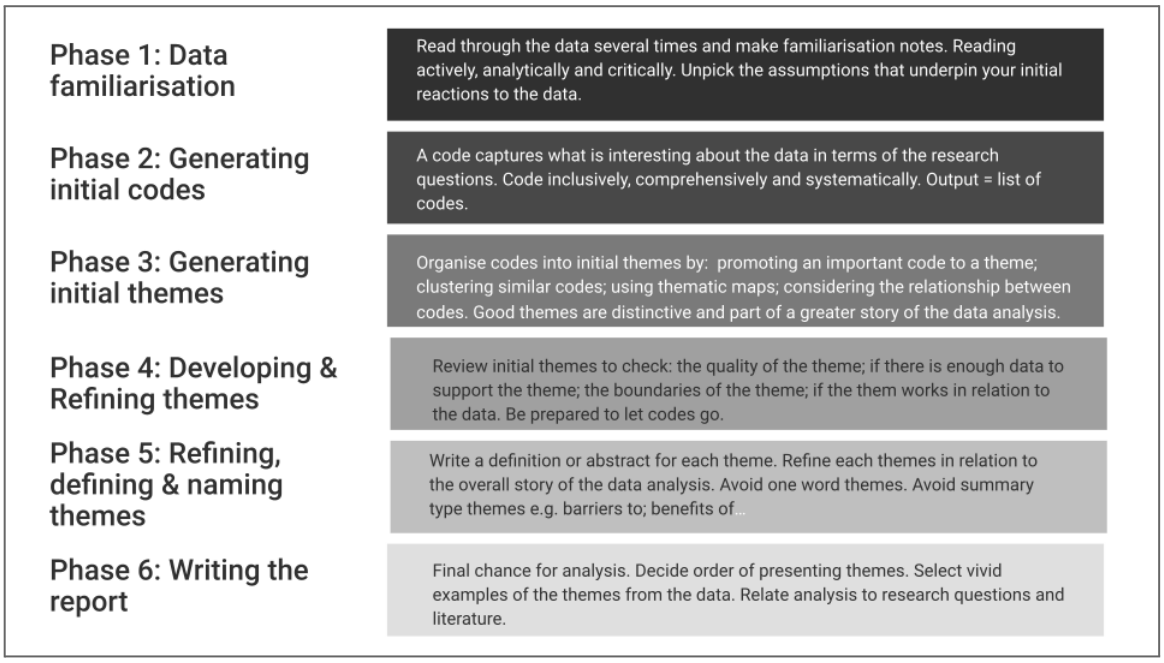
4.4.2.1 Overview of the qualitative data

The qualitative data comprised focus group interviews and responses to the open questions of the post-intervention survey. Four participants of the digital wellbeing intervention took part in focus group interview #1 and six participants took part in focus group interview #2. Fourteen participants responded to the post-intervention survey open questions inviting participants to comment anonymously on: the impact (if any) of the digital wellbeing intervention; the most useful and least useful aspects of the digital wellbeing intervention; suggestions for future rollouts of the digital wellbeing intervention; and plans (if any) to apply the learning from the digital wellbeing intervention. Data extracts are labelled within the data analysis as outlined in figure 5.17.

4.4.2.2 Reflexive thematic analysis

A reflexive thematic analysis approach was adopted for the analysis of the qualitative data from the focus group interviews, following Braun & Clarke's (2020) framework. This approach involves identifying patterns or themes within qualitative data through a rigorous and systemic six phases of analysis (figure 4.11).

Figure 4.10 Phases of analysis, adapted from Braun & Clarke's (2020) revised thematic analysis framework



A reflexive thematic analysis approach emphasises the researcher's role in data analysis (Braun & Clarke, 2016). The researcher makes active decisions in relation to the data analysis process and reflects on those decisions throughout this process. Codes and themes are generated representing the researcher's interpretation of the data (Braun & Clarke (2016) are generated and the data is 'tagged' using these codes and themes. The researcher is compared to an artist who is actively 'creating' or generating analysis of the data. Nvivo software[14] was used for all six phases of data analysis to organise the data during the coding process. A key aspect of the reflexive process is to consider the assumptions underpinning data analysis decisions. Notes were recorded at each stage of the data analysis process to ensure the researcher interrogated data analysis decisions reflexively as outlined by Braun & Clarke (2020). Each phase of the data analysis process is described in detail in the following section.

[14] NVivo is a qualitative data analysis software

4.2.2.3 Phase one: data familiarisation

Phase one involved creating verbatim transcripts of the audio/video recordings of the focus group interviews. The transcription process followed the guidance of Braun and Clarke (2020), and therefore a complete record of the focus groups interviews was created including partial words or stutters, along with some other features such as laughter. These transcripts, and the qualitative data from the post intervention survey, were then read through several times and initial notes on the data were recorded by the researcher, see example (figure 4.12).

Figure 4.11 Extract from familiarisation notes: focus group interview #1

Familiarisation notes

What I did
Listened to recording - active listening
Casual notes/observations
Potentially interesting passages
Document thoughts and feelings

Notes
Had not considered how much planning and clear prioritisation of work contributes to wellbeing in workplace but this is very obvious on reflection. I feel it is mentioned perhaps because of the counter impact that lack of planning impacts...
Very insightful reflections on digital wellbeing and the workshop experience
Covid has sparked a reflective process for the group on workplace wellbeing. Could also be too early to reflect?
Digital wellbeing is viewed as an important aspect of workplace wellbeing for the group
DWB is viewed as a personal responsibility generally

How I felt about it?
Very energised with the enthusiasm and general positive vibe about the workshops and the interest in the topic.

Interesting points that I had not considered include...
Value of workshops by university could be a barrier - could potentially be addressed through a microcredential of some type - through NF? Might be easier than DCU….did this appear in the literature?
Study as an additional complexity to work-home balance and lined to digital tech
Level of interest in reading more/learning more to be structured more clearly in future

4.2.2.4 Phase two: generating initial codes

Phase two involved generating initial codes from the data by reviewing and tagging the data with labels or codes that capture what is pertinent to the research questions within the data (Braun & Clarke, 2020). Codes are described as either ‘semantic’ or ‘latent’. Semantic codes describe explicitly stated ideas within the data. An example of a semantic code generated in phase two is ‘managing digital wellbeing is challenging’. Participants explicitly refer to the challenges of managing digital wellbeing in the data. Latent codes represent more implicit meaning within the data. An example of a latent code generated in

phase two of the data analysis process is ‘always-on culture is a very emotive topic’. None of the participants explicitly states that always-on culture is an emotional experience. The researcher is interpreting that always-on culture is an emotional topic for the participants through the reflexive thematic analysis process. Codes were created using Nvivo software coding tools, and examined initially for quality using the ‘remove the data’ test as described by Braun, Clarke & Weather (2016; p. 9). The ‘remove the data’ test for coding quality involves reviewing the code to ascertain if the code label evokes the data for the reader without seeing the data. For example, the code ‘Managing digital wellbeing is challenging’ evokes the meaning of the data without viewing the corresponding data. However, an early code which did not pass the ‘remove the data’ test was ‘intervention design’. This coding label does not tell us anything about the data without reviewing the data itself. The coding process of phase two allowed the researcher to parse the different meanings within the data into separate codes in preparation for phase three.

An important aspect of the entire process is the researcher’s reflection on the assumptions underpinning the data analysis process. An example of this reflexive process is illustrated in the extract from the researcher’s reflexive notes from phase two of the data analysis process, figure 4.13 below. The researcher pauses to address the theoretical assumptions guiding the data analysis process guided by Braun & Clarke’s (2020) prompts.

Figure 4.12 Extract from researcher reflexive notes from phase two

Addressing theoretical assumptions
and articulating in the methodology and/or data analysis chapter communicates to the reader how the researcher has understood the data.
The meaning is important not just about the number of references...

Essentialist vs contructionist
(essentialist approach adopted here) in line with pragmatic world view
meaning comes from
1. researcher's framing of content as importanct in the context of the research questions
2. the expression of varying degrees of imporance with regard to the issues being addressed.

acknowledge imporatnce of repetition but not the only thing that adds meaning. e.g. emphasis/tone??
meaning is socially constructed - within the focus group and then through the interpretive lens of the reseacher.

Experiential vs critical orientation
to emphasise meaning as ascribed by the partcipant experiential here as research is exploring attitides to wellbeing @work and digital technologies.

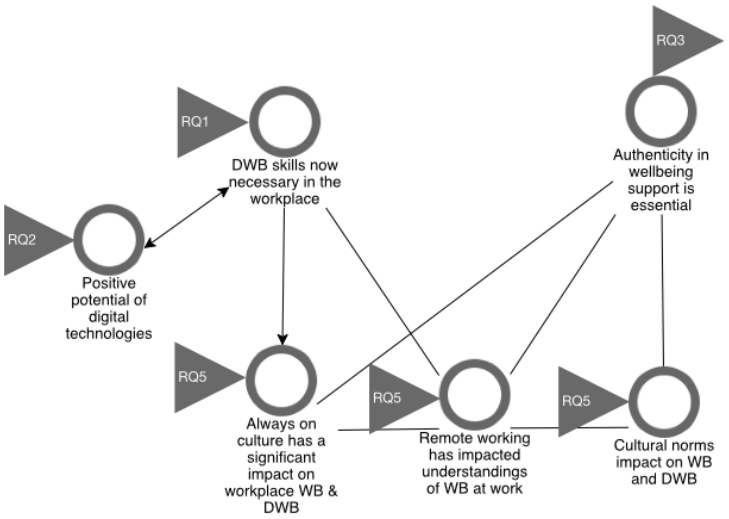
Inductive vs deductive
(abductive in line with methodology chapter) a mix

Semantic vs latent
both, neither more important, both convey meaning from the data...

4.2.2.5 Phase three: generating initial themes

Phase three involved generating initial themes from the codes produced in phase two. The guidelines on quality of theme generation suggested by Braun & Clarke (2016, 2020) were followed, including promoting a prominent code to a theme, clustering codes into themes, and using thematic maps to organise the codes and themes. An initial thematic map was produced to visualise the connections between codes (figure 4.14).

Figure 4.13 Initial thematic map phase three



4.2.2.6 Phase four: developing and refining themes

Phase four involved reviewing the themes for overlap and generating a revised thematic map to guide the next stages of the process. During this process the initial six themes generated in phase three were condensed into four themes, due to overlapping of codes and themes (figure 4.15).

Figure 4.14 Phase five thematic map

4.2.2.7 Phase five: refining, defining and naming themes

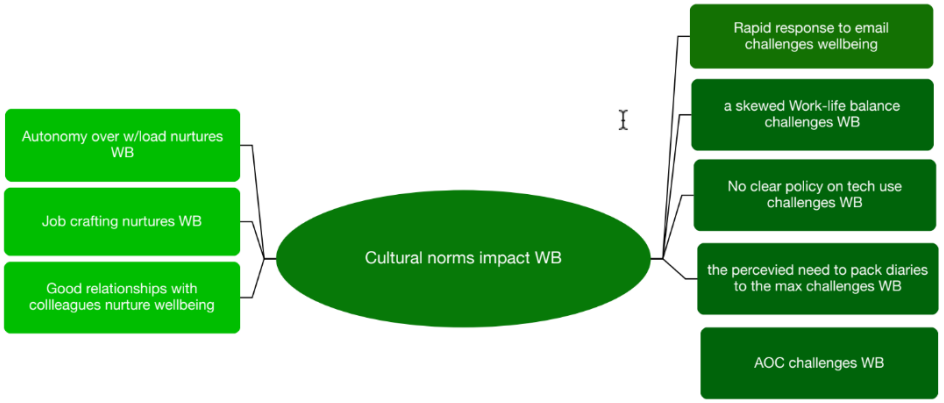
Phase five involved refining the themes and generating clear definitions and labels for each theme. Sub themes were generated within each of the four themes, reflecting the codes. During this phase thematic maps were produced to visualise potential overlaps between codes. The data was re-coded where appropriate. The re-coded data was then reviewed to ensure that the new code reflected the data.

4.2.2.8 Phase six: writing the final report

Phase six involved the writing of the report. During this phase the researcher continued to refine the themes and labels for each theme. An example of the process of refining themes during phases five & six for is presented in figure 4.16. The researcher refines the sub themes from eight to five. The extracts from the researcher's notes below each thematic map offer insight into the process of refining the themes.

Figure 4.15 Illustrative example of refining themes phases four - five

Cultural norms sub theme map: phase four



Researcher's notes:

Strongest codes here: rapid response to email; no clear policy on technology use and wellbeing; always-on culture challenges wellbeing. As relationships with colleagues and job crafting do not relate specifically to digital technologies, they can be removed for now.

Cultural norms sub theme map: phase five

Researcher's notes:

Autonomy is a code that is weak in terms of its relationship to digital technologies. However, it could be reframed to connect more directly to digital technologies.

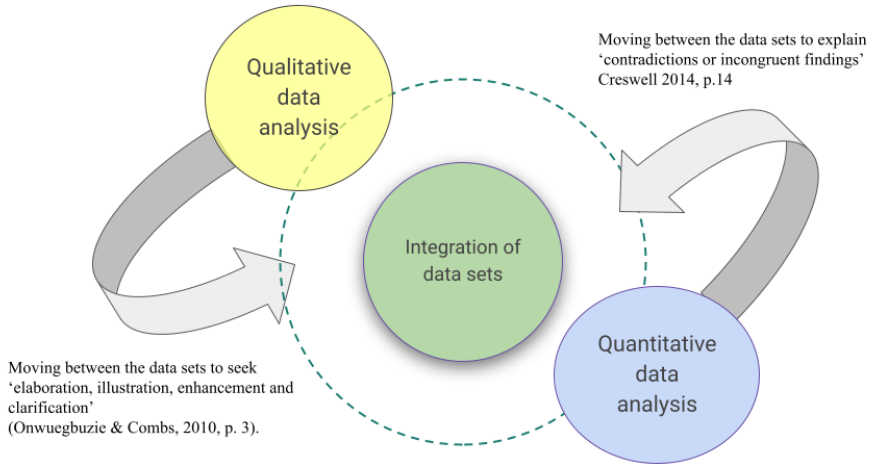
In addition to following Braun & Clarke's (2016) process of data analysis, the researcher considered the literature suggesting that the unit of analysis is the entire group discussion and not just the individual contributions. Guidelines for analysis within the literature caution that the volume of text within a focus group discussion does not necessarily reflect the importance of a topic (Curry, 2015) and these guidelines were drawn upon during the data analysis process.

4.4.3 Integrating the data analysis

The parallel and separate data analysis of the qualitative and quantitative data sets was followed by a process of integrating the data analysis. An abductive approach to

generating theory was adopted with the researcher moving between the qualitative and quantitative data to "seek elaboration, illustration, enhancement, and clarification of the findings from one analytical strand (e.g., qualitative) with results from the other analytical strand (e.g., quantitative)" (Onwuegbuzie & Combs, 2011; p.3) (figure 4.17).

Figure 4.16 Process for integrating the qualitative and quantitative data



4.5 Ethical Considerations

This research study was conducted in accordance with the ethical guidelines of Dublin City University and research ethics approval was forthcoming from the research ethics committee based on a comprehensive research ethics submission. As part of this application process, due consideration was given to informed consent, plain language statements and the freedom to withdraw from the study.

This study is categorised as 'insider research', i.e. research conducted within an institution where the researcher is employed and studying, and thus raised several additional considerations in relation to the ethics of the study (Toy-Cronin, 2018; Trowler, 2011). Trowler's (2011) continuum of 'insiderness' (p. 5) was drawn upon to manage these ethical challenges, as this continuum prompts the researcher to re-position on the continuum at points during the research process in order to manage the potential ethical issues of insider research. For example, in the context of the focus group interviews, the researcher needed to be strongly positioned as an outsider to avoid what Hammersley & Atkinson (2007)

describe as ‘over-rapport’ between researcher and participants, which could result in the research data being skewed at the analysis and reporting stage of the research (p. 87).

Established relationships between the researcher and participants can mean that participants may have pre-formed expectations of the researcher’s alignments, potentially leading to ‘interview bias’, where research participants adjust their responses to reflect their perceptions of the researcher’s preferences (Trowler, 2011). In this study, the researcher was concerned that participants’ awareness of her role as learning technologist could skew responses to both survey and focus group questions. The collection of data through anonymous surveys encourages participants to freely express their feelings.

While confidentiality is a concern for all researchers, it presents a particular challenge for the insider researcher. Atkins & Wallace (2012) suggest that insider researchers must take additional measures to normal guidelines on confidentiality and consider “the possible implications… of inadvertently releasing information, and considering how that could be avoided” (p. 6). In the context of this study the researcher followed the standard guidelines around assurances of confidentiality as outlined by the research ethics committee, and in addition, articulated the limitations of confidentiality to participants in the informed consent statement. One of the limitations of anonymity for this study related to the digital wellbeing intervention as it was not possible to protect the identity of the group participants from each other during the professional learning engagement. In terms of the research data, in addition to adhering to standard confidentiality guidelines, every effort was made to remove any indirect identifiers of participants, for example if a particular comment implicitly identifies the participant. While information on the demographics of the group is presented in the research findings, when presenting data from the focus groups the researcher does not ascribe comments to particular roles as this could indirectly identify the participant to readers with a knowledge of the University.

This chapter has outlined and justified the methodological approach and the research design for this study. The findings from the study are presented and discussed in chapter five, with conclusions and recommendations outlined in chapter six.

Chapter 5 Findings

5.1 Quantitative findings

5.1.1 The quantitative data analysis approach

While the quantitative data analysis was designed originally to include both descriptive and inferential analysis, just seventeen participants completed the digital wellbeing intervention across two cohorts: one of seven and one of ten participants. Two participants failed to complete the pre-intervention survey and three participants did not complete the post-intervention survey, leaving fifteen responses for the pre-intervention survey and fourteen post-intervention survey responses. The lower than expected numbers meant that an inferential analysis was limited in terms of value (Knapp, 2017). Therefore, quantitative data analysis comprises descriptive statistics only. The response frequencies for each of the five quantitative survey questions are organised and summarised into charts in order to understand: the number of participants reporting stress relating to the challenges presented by digital technologies to workplace wellbeing (addressing research question #1); the participants' perceived usefulness of digital technologies in the workplace (addressing research question #2); and participants' eudaimonic workplace wellbeing (addressing research question #3). The quantitative data was examined to determine if there were significant differences between the cohorts to warrant separate analysis. As there were no such differences the data is presented as one.

5.1.2 The impact of digital technologies on workplace wellbeing

Three categories of the Digital Stressors Scale (DSS) (Fischer, Rueter and Reidel, 2021), were used to collect data relating to the impact of digital technologies on workplace wellbeing (digital stress), addressing research question #1 "Can/how can a digital wellbeing intervention support staff to manage the challenges of digital technologies of workplace wellbeing in the specific context of higher education?" Data were gathered relating to three of the key challenges presented by digital technologies to workplace wellbeing identified through the literature review: work-home boundaries; digital overload;

and digital distractions. The survey questions relating to the challenges of digital technologies comprised five indicator statements using a seven-point likert scale constructed to measure stress relating to digital technologies. Therefore, when a respondent agreed with a statement, this agreement indicated the presence of stress. When a respondent disagreed with a statement, this indicated the absence of stress. The response rate was 94% (n=fifteen) for the pre-intervention survey, and 88% (n=fourteen) for the post-intervention survey.

5.1.2.1 Work-home boundaries (DSS survey category II - conflicts)

Category II of the DSS explores the impact of digital technologies on managing work-home boundaries. In the pre-intervention survey, the number of respondents who agreed with the five indicator statements significantly outweighed the number who disagreed, indicating that the majority of participants experience stress due to digital technologies impacting work-home boundaries (figure 5.1). Eleven respondents agreed with statement #1 'I feel that my private life suffers due to digital technologies enabling work-related problems to reach me everywhere', while just four disagreed. The responses to statement #2 'It is too hard for me to keep my private life and work life separated due to digital technologies' represent an outlier within DSS category II. Eight respondents agreed with the statement, while seven disagreed. For statement #3 'Digital technologies make it harder to create clear boundaries between my private and work life' ten agreed, while five disagreed. Eight respondents agreed with statement #4, 'My work-life balance suffers due to digital technologies', two were undecided, and five disagreed. For statement #5 'The ubiquity of digital technologies disturbs my work-life balance', a majority of nine agreed, five disagreed, and one was undecided.

Post-intervention, the number of respondents reporting stress caused by digital technologies in relation to work-home boundaries increased slightly for some indicators, and decreased slightly for others (figure 5.2)[15]. The number of respondents who agreed with statement #1 'I feel that my private life suffers due to digital technologies enabling work-related problems to reach me everywhere', drops from eleven to eight. Similarly, the respondents who agreed with statement #2 'It is too hard for me to keep my private life and

[15] The slight discrepancy of percentages is explained by the slightly lower response rate post intervention - 14 compared to 15 pre-intervention.

work life separated due to digital technologies' decreased post-intervention from eight to four. The number of respondents who disagreed with statement #2 also decreased from seven to six, as three respondents are now undecided. The respondents who agreed with statement #3 'Digital technologies make it harder to create clear boundaries between my private and work life', remained unchanged[16] post-intervention at ten. The number of respondents who agreed with statement #4 'my work-life balance suffers due to digital technologies', & statement #5 'The ubiquity of digital technologies disturbs my work-life balance', remained the same post-intervention at eight, and nine respectively.

Figure 5.1 DSS Category 'Conflicts' Pre-intervention Responses

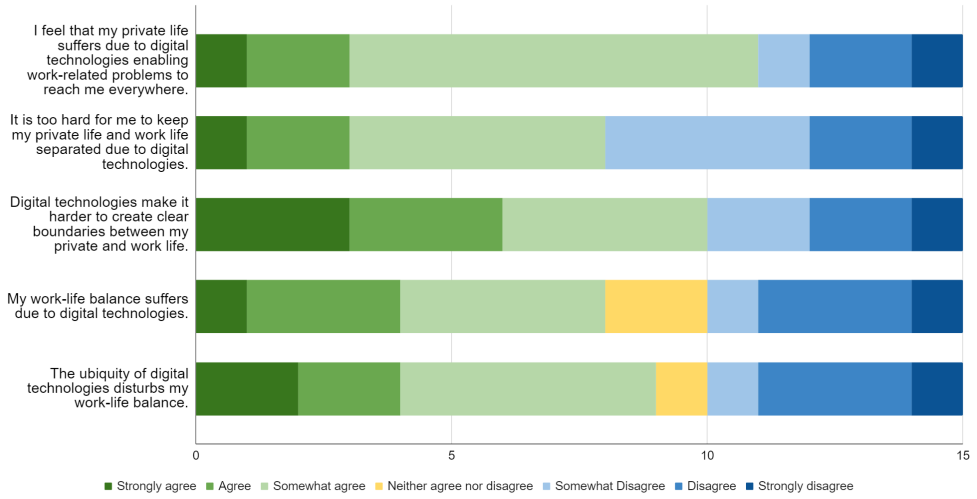
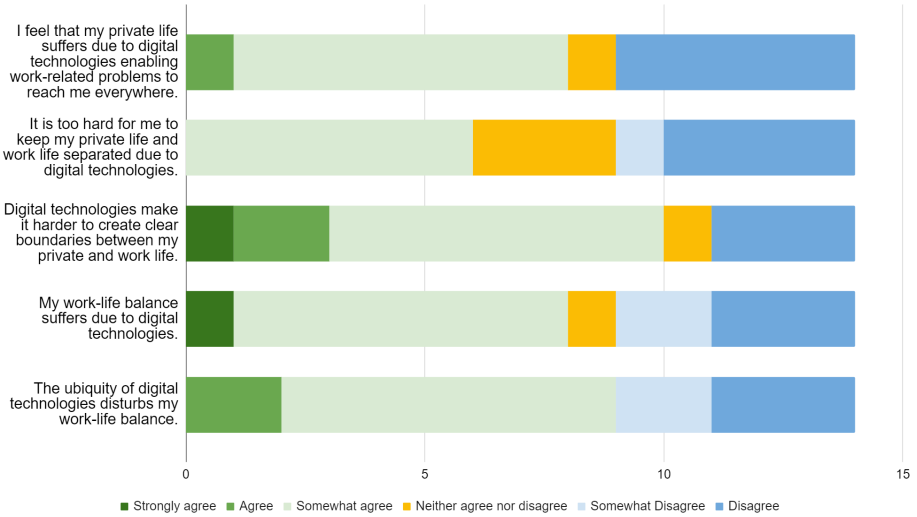


Figure 5.2 DSS Category 'Conflicts' Post-intervention Responses



[16] While the numbers remained the same at (n=10), there was one less respondent post-intervention.

In summary, prior to participating in the digital wellbeing intervention, a majority of respondents agreed with all five statements on work-home boundaries, indicating that the majority of respondents experience stress relating to work-home boundary management due to digital technologies. While there are slight changes post-intervention, a number of participants continued to report stress relating to work-home boundary management due to digital technologies. These findings reflect prior work that demonstrates the significant impact that digital technologies have on work-home boundary management (Kossek *et al.,* 2012; Bordi *et al.,* 2018; Cecchinato, Cox & Bird*,* 2015; Rich, Aly, Cecchinato *et al.,* 2020).

5.1.2.2 Digital overload (DSS category V - Overload)

Category V of the DSS explores a range of factors relating to the generation of workload by digital technologies. Prior to participating in the digital wellbeing intervention, there was a mixed level of agreement/disagreement across the five indicator statements (figure 5.3).

Five respondents agreed with statement #1 ‘Due to digital technologies I have too much to do’, considerably lower than the eight participants who disagreed. Five participants agreed with statement #2 ‘Due to digital technologies I have too wide a variety of things to do at work’. One was undecided, and nine disagreed. Six participants agreed with statement #4 ‘I never have any spare time, as my schedule is too tightly organised by digital technologies’. Two were unsure and seven disagreed.

Respondents leaned slightly towards agreeing with the statements relating specifically to digital communication tools generating additional workload. Nine respondents agreed with statement #3 ‘Digital technologies make it too easy for others to send me additional work’. Just one was undecided and five disagreed. Eight respondents agreed with statement #5 ‘There is a constant surge of work-related information coming in through digital technologies that I just cannot keep up with’, one wsa uncertain, and six disagreed.

The numbers agreeing with statement #1 ‘Due to digital technologies I have too much to do’, increases slightly post-intervention from five to six, representing the presence of stress for a slightly larger number of respondents (figure 5.4). There is also an increase in the level of neutrality from two to three respondents. The numbers disagreeing dropped from

eight to five. The numbers agreeing with statement #2, 'Due to digital technologies I have too wide a variety of things to do at work' increased from five to six post-intervention. The numbers agreeing with statement #4 'I never have any spare time, as my schedule is too tightly organised by digital technologies', decreased from six to four after participation in the intervention. The numbers agreeing with statement #3 'Digital technologies make it too easy for others to send me additional work', increased from nine to twelve post-intervention. The numbers agreeing with statement #5 'There is a constant surge of work-related information coming in through digital technologies that I just cannot keep up with', which increased from eight to ten.

Figure 5.3 DSS Category 'Overload' Pre-intervention Responses

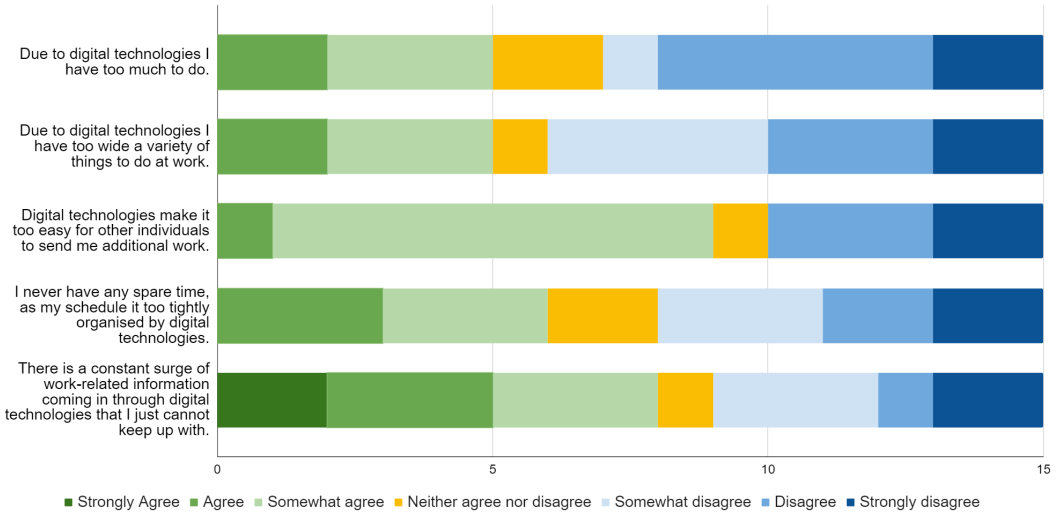
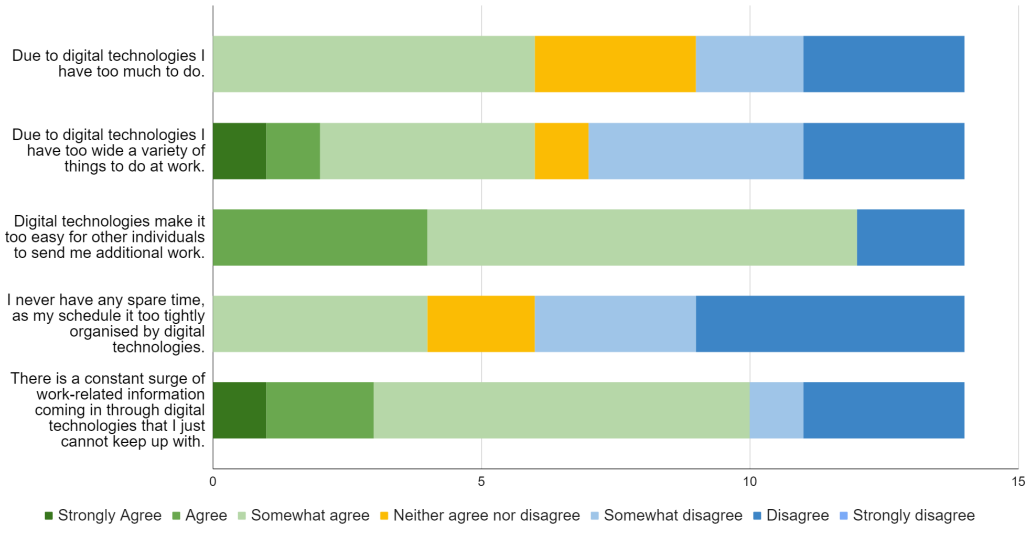


Figure 5.4 DSS Category 'Overload' Post-intervention Responses



In summary, for category V of the DSS (digital overload) the number of respondents who agreed/disagreed varied across the five statements pre- and post-intervention. A minority of respondents agreed with the statements relating to the impact of digital technologies on workload (statements #1, 2 & 4). For statements #3 and #5, which relate specifically to overload relating to digital communications, a majority agreed prior to participating in the digital wellbeing intervention, indicating that digital communication technologies create stress for a majority of respondents. The level of agreement with these two statements increases post-intervention to twelve and ten respectively, a finding which is explored in more depth in the qualitative data. Overall, the findings relating to digital overload reflect prior research demonstrating that digital communication tools create a significant overload of information which impacts workplace wellbeing (Bordi *et al.,* 2018; Tarafdar, Gupta & Turel, 2015; Mark *et al.,* 2015; Cecchinato, 2018).

5.1.2.3 Digital distractions (DSS category VII - social environments)

Category VII of the DSS explores how digital technologies create distractions within the social environment of the workplace. There was a mixed level of disagreement/agreement across the five statements prior to participating in the digital wellbeing intervention (figure 5.5). Five participants agreed with statement #1 'Due to digital technologies I have too much to do with the problems of others'. Twelve agreed with statement #2 'I think that digital technologies generate too much of an expectation that I have to be reachable everywhere and at any time'. Only two participants disagreed with the statement, as one was undecided. A number of respondents were unclear if social media impacts on their wellbeing, with five undecided for statement #3 'Too much time gets lost at work because of irrelevant communication with other people on social media'. Only two respondents agreed and seven disagreed. Twelve respondents agreed with statement #4 'I feel that digital technologies create unwanted social norms (e.g. the expectation that emails should be answered right away)'. While three were undecided on statement #5 'It is too hard to take a break from social interaction at work due to the communication possibilities of digital technologies', a slight majority of eight agreed.

Post-intervention, the number of respondents agreeing with statement #1 'Due to digital technologies I have too much to do with the problems of others' remained the same at five (figure 5.6). There is no change in the number of participants who agreed with statement

#2 ‘I think that digital technologies generate too much of an expectation that I have to be reachable everywhere and at any time’ post-intervention (twelve). The numbers who disagreed with statement #2 dropped slightly from three to two, with no one undecided on this statement post-intervention.

There is a notable swing in respondent agreement with from statement #3 ‘Too much time gets lost at work because of irrelevant communication with other people on social media’ post-intervention from two to ten respondents. Most of this swing appears to be a shift in perceptions of respondents who were undecided pre-intervention, as that number falls from five to one. There was a slight drop in the number of respondents who agreed with statement #4 ‘I feel that digital technologies create unwanted social norms (e.g. the expectation that emails should be answered right away)’ post-intervention from twelve to ten. The numbers agreeing with/experiencing stress relating to statement #5 ‘It is too hard to take a break from social interaction at work due to the communication possibilities of digital technologies’ fell from eight to four post-intervention.

Figure 5.5 DSS category VII ‘Social Environments’ Pre-intervention Responses

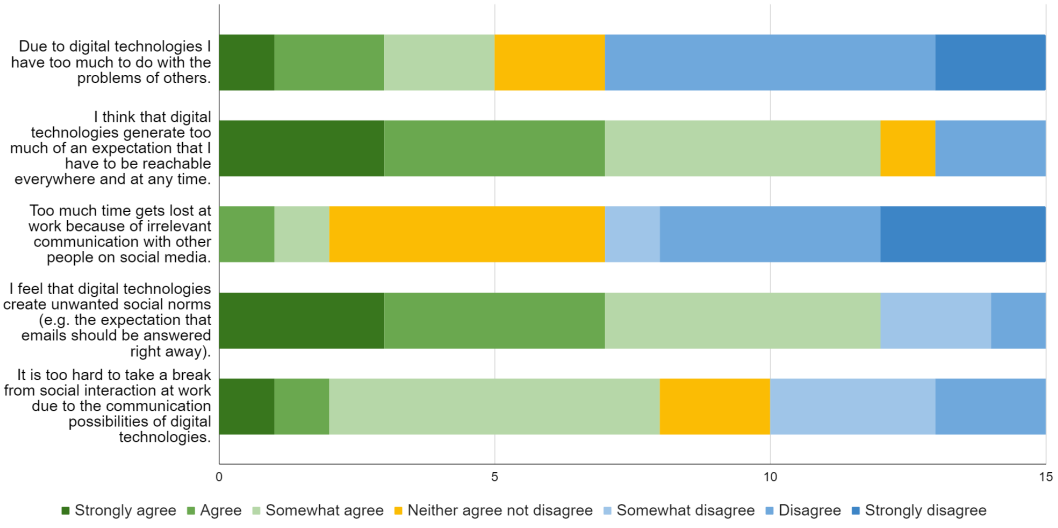
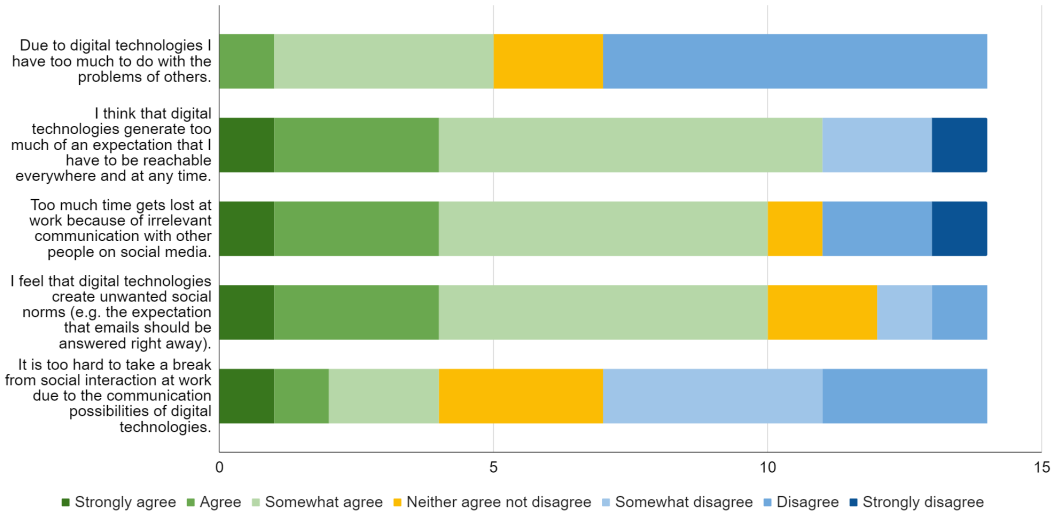


Figure 5.6 DSS category VII - Social Environments Post-intervention Responses



In summary, the number of respondents agreeing/disagreeing with the five statements in category VII of the DSS - social environments was mixed both pre-intervention and post-intervention. A minority of respondents agreed with statement #1 'Due to digital technologies I have too much to do with the problems of others', both pre-intervention and post-intervention, indicating that this minority experienced stress relating to this indicator statement. A majority of respondents agreed with statements #2 & #4 pre-intervention and post-intervention. These statements relate to cultural norms relating to digital communication tools and the findings reflect prior work demonstrating that digital communication tools are significant distractions in the workplace (Mark, Gudith & Klocke, 2008).

There are marked changes for two of the statements post-intervention. The number of respondents agreeing with/experiencing stress relating to statement #3 'Too much time gets lost at work due to irrelevant communication with other people on social media', increases dramatically from two to ten. The post-intervention data echoes previous research illustrating a growing use of social media in the workplace (Chartered Institute of Personnel & Development, 2020), and the significant challenges of disconnecting from social media (Nguyen, 2021). The numbers agreeing with/experiencing stress relating to statement #5 'It is too hard to take a break from social interaction at work due to the communication possibilities of digital technologies' is halved post-intervention from eight to four. These findings were explored in more detail in the focus group interviews.

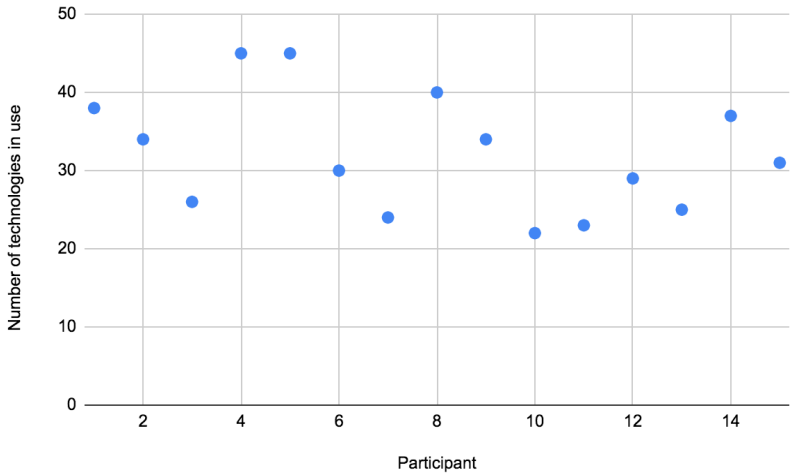
5.1.3 Usefulness of digital technologies (DSS category IX)

Category IX of the DSS was used to gather data related to the usefulness of digital technologies in achieving workplace goals, addressing RQ#2 "Can/how can a digital wellbeing intervention support higher education staff to understand the positive potential of digital technologies?" The five statements in this DSS category frame digital technologies as not useful in the workplace context. Therefore agreement with the statements indicates that the respondent does not find digital technologies useful in respect of that specific indicator statement. Prior to participating in the intervention, the number of respondents agreeing/disagreeing with the five statements is mixed (figure 5.8). No respondent agreed with statement #1 'The digital technologies available to me at work do not fit well with the demands of my role'. With just one undecided, a majority of fifteen disagreed with the statement, indicating that they consider digital technologies useful in their work context. Just three respondents agreed with statement #2 'I do not feel that I gain enough benefits from the digital technologies provided to me at work', while a majority of ten disagreed. No respondent agreed with statement #5 'I think that most of the digital technologies provided for me at work are not useful enough and I could work without them'. While a number of participants were undecided (three), a majority of twelve disagreed with the statement.

A higher number of respondents agreed with statements #3 and #4, indicating that they find some of the digital tools and some of the functionalities of these tools provided to them in the workplace unnecessary. While seven respondents agreed with statement #3 'The digital technologies that I use at work are full of too many functionalities that I never use', a slight majority of eight respondents disagreed. Similarly six participants agreed with statement #4 'Too many different digital technologies and systems are required to fulfil the tasks I have to do on a daily basis', while a slightly higher number (seven) disagreed.

Relevant to these findings, data was also collected on the range of digital technologies used by participants prior to the rollout of the digital wellbeing intervention. Participants reported using at least twenty-two different technologies, with three respondents using forty+ different technologies in the work context (figure 5.7).

Figure 5.7 Respondents Use of Technologies (Pre-intervention Data)



The number of respondents agreeing with three of the five statements increased slightly post-intervention (figure 5.9). Two respondents agreed with statement #1,'The digital technologies available to me at work do not fit well with the demands of my role, post-intervention, up from zero pre-intervention. The number of respondents agreeing with statement #2, 'I think that most of the digital technologies that I am supplied with at work are not useful enough and I could work without them' remained the same at three post-intervention[17]. One respondent agreed with statement #5 'I think that most of the digital technologies that I am supplied with at work are not useful enough and I could work without them', in comparison to zero pre-intervention.

The number of respondents who agreed with statement #3,'The digital technologies that I use at work are full of too many functionalities that I never use, decreased slightly from seven to six, post-intervention. The number of respondents who agreed with statement #4, 'Too many different digital technologies and systems are required to fulfil the tasks I have to do on a daily basis', remained at six.

[17] Slight discrepancy of percentage due to different numbers exit survey

Figure 5.8 DSS Category IX 'Usefulness' Pre-intervention

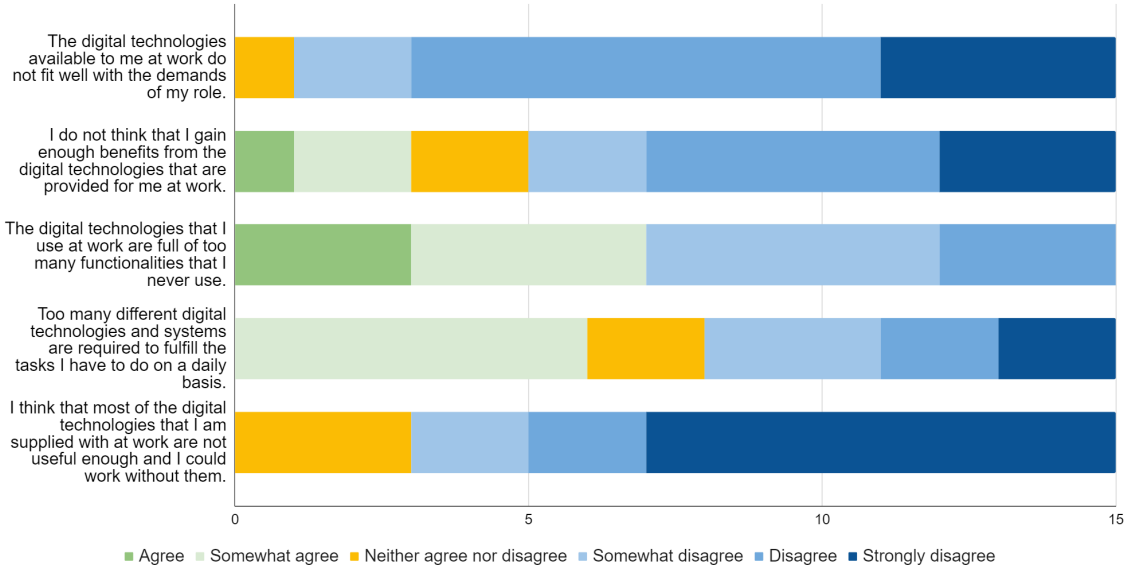
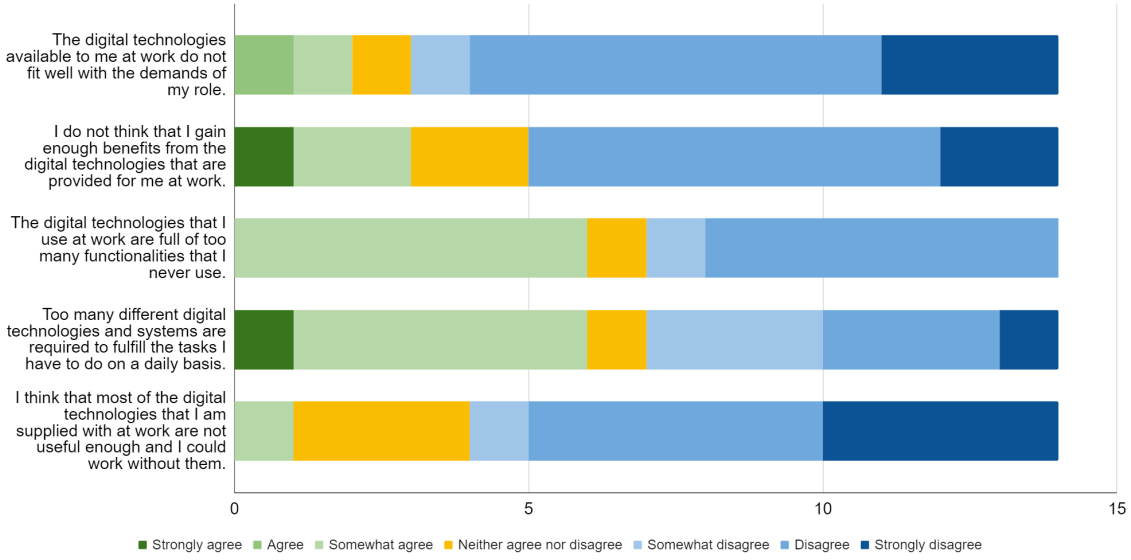


Figure 5.9 DSS Category IX 'Usefulness' Post-intervention Responses



In summary, a majority of respondents disagree with the statements relating to the usefulness and suitability of digital technologies provided in the workplace in a broad sense, both prior to and post intervention participation. This finding indicates that digital technologies are perceived by the majority of respondents as useful in the workplace, reflecting prior work highlighting the usefulness of workplace digital technologies (Bordi *et al.,* 2018; Diaz *et al.,* 2012; Chartered Institute of Personnel & Development, 2020). A number of respondents agreed with the two statements relating to the range of digital tools

required in the workplace, indicating that they find the range of tools and range of functionalities excessive for the workplace requirements. These findings reflect previous research establishing that an extensive range of digital tools used in the workplace causes stress (Tarafdar, Gupta & Turel, 2015).

5.1.4 Workplace wellbeing

The Eudaimonic Workplace Wellbeing Scale (EWWS) (Bartels, Peterson & Reina, 2019), was used to collect data across eight indicators of eudaimonic workplace wellbeing, addressing research question #3 'Does a digital wellbeing intervention impact workplace wellbeing' (figures 5.10 & 5.11).

Prior to participating in the digital wellbeing intervention, a high number of respondents agreed with all eight eudaimonic workplace wellbeing statements. Twelve respondents agreed with statement #1, 'Among the people I work with I feel there is a sense of collegiality', two were undecided and no respondent disagreed. Twelve respondents agreed with statement #2 'I feel close to the people I work with regularly', one disagreed and one was undecided. Eleven respondents agreed with statement #3 'I feel connected to others within the work environment', two disagreed, and fourteen percent two were undecided. The number of respondents who agreed with statement #4 'I consider the people I work with to be my friends', was lowest at nine. Five respondents were undecided, while one disagreed.

Ten respondents disagreed with statement #5 'I am emotionally energised at work', while four were undecided, and just one disagreed. Twelve respondents agreed with statement #'I feel that I have a purpose at my work' and three were undecided. Thirteen respondents agreed with statement #6 'I feel I am able to continually develop as a person in my job', just one was undecided and one disagreed. All respondents agreed with statement #7 'My work is important to me'. Thirteen respondents agreed with statement #8 'I feel I am able to continually develop as a person in my job', just one was undecided and one disagreed.

The number of respondents who agreed with statement #1 'Among the people I work with I feel there is a sense of collegiality', remained the same at twelve post-intervention, while one disagreed. Similarly, the number of respondents who agreed with statement #2 'I feel close to the people I work regularly with' remained at twelve post-intervention. The

numbers who disagreed with statement #3 ‘I feel connected to others within the work environment’ increased from one to twenty-one percent three. The numbers agreeing with statement #4 ‘I consider the people I work with to be my friends’ remained the same post-intervention at nine.

Post-intervention there was a slight increase in the number of respondents who agreed with statement #5 ‘I am emotionally energised at work’ from ten to eleven. Two participants disagreed with the statement compared to one pre-intervention. Those undecided prior to participating in the digital wellbeing intervention decreased from four to one. The number of respondents who agreed with statement #6 ‘I feel that I have a purpose at my work’ remained the same at twelve, and a slight level of disagreement also emerged (one respondent). The trend is similar for statement #7 ‘My work is important to me’. The numbers agreeing dropped from fiften to thirteen. The numbers agreeing with statement #8 ‘I feel I am able to continually develop as a person in my job’, the percentage remained at twelve post-intervention.

Figure 5.10 Eudaimonic Workplace Wellbeing Scale Responses (Pre-intervention)

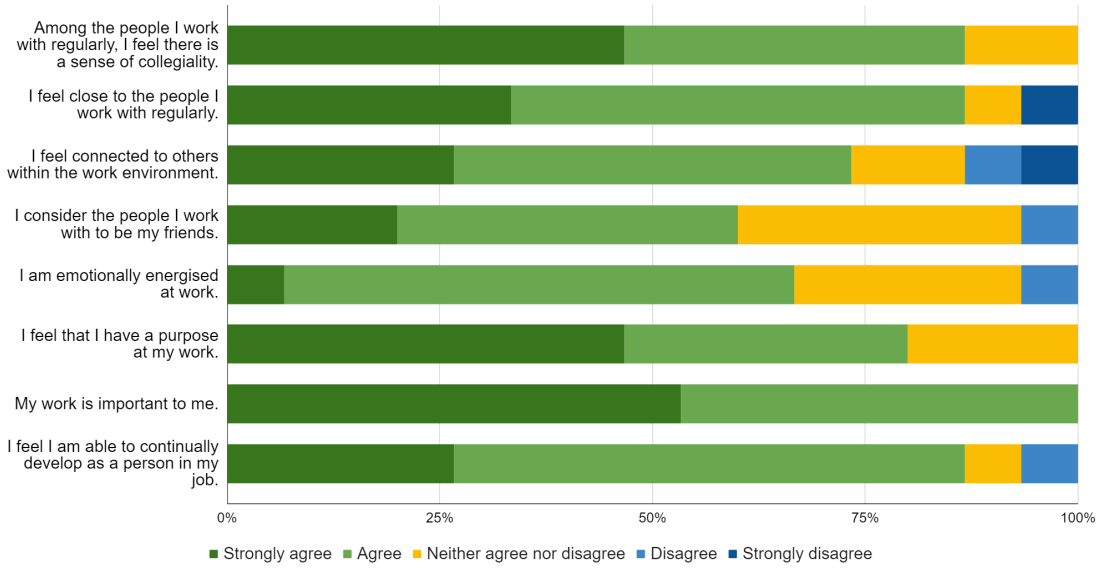
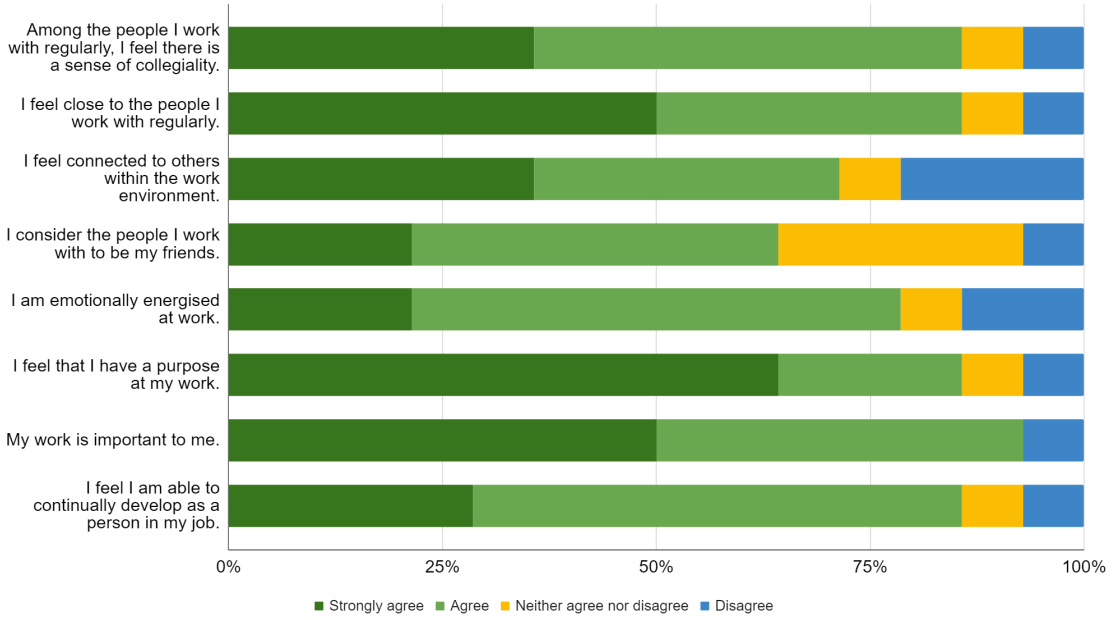


Figure 5.11 Eudaimonic Workplace Wellbeing Scale Responses (Post-intervention)

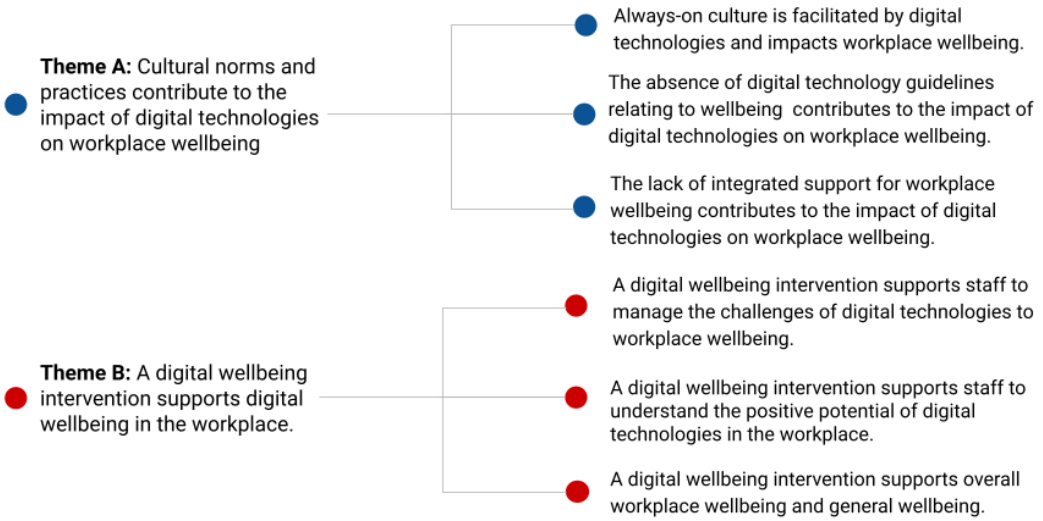


In summary, respondents reported a high level of agreement with all eight eudaimonic workplace wellbeing statements both pre-participation and post-participation in the digital wellbeing intervention. These findings challenge current literature on workplace wellbeing, which highlights a myriad of challenges to workplace wellbeing, including those presented by digital technologies (Hirschle & Gondim, 2020; McDaid & Park, 2014; Sonnentag, 2015; Bragard *et al.,* 2015). The lowest level of agreement arises for statement #4 "I consider the people I work with to be friends", but it is still quite high. These findings are further explored in the qualitative data.

5.2 Qualitative findings

The qualitative data is presented as two separate but interconnected themes: cultural norms and practices contribute to the impact of digital technologies on workplace wellbeing; and a digital wellbeing intervention supports workplace wellbeing. These themes each incorporate a number of sub themes which address specific aspects of the research questions (figure 5.12).

Figure 5.12 Themes generated from the data analysis



To avoid redundancy in the reporting of data, the most relevant extracts are used to support the data analysis. Data from the focus groups and surveys is labelled as per figure 5.13 below.

Figure 5.13 Qualitative data reference labels

Focus group participant	In text label	Survey respondent	In text label
Focus group 1 participant #1	FG1p#1	Respondent #1	SR#1
Focus group 1 participant #2	FG1p#2	Respondent #2	SR#2
Focus group 1 participant #3	FG1p#3	Respondent #3	SR#3
Focus group 1 participant #4	FG1p#4	Respondent #4	SR#4
Focus group 2 participant #1	FG2p#1	Respondent #5	SR#5
Focus group 2 participant #2	FG2p#2	Respondent #6	SR#6
Focus group 2 participant #3	FG2p#3	Respondent #7	SR#7
Focus group 2 participant #4	FG2p#4	Respondent #8	SR#8
Focus group 2 participant #5	FG2p#5	Respondent #9	SR#9
Focus group 2 participant #6	FG2p#6	Respondent #10	SR#10
		Respondent #11	SR#11
		Respondent #12	SR#12
		Respondent #13	SR#13
		Respondent #14	SR#14
		Respondent #15	SR#15

By exploring the workplace cultural norms and practices relating to digital technologies and how they contribute to the impact of digital technologies on workplace wellbeing, the analysis in theme A sets the context for theme B which explores the impact of the digital wellbeing intervention on workplace wellbeing.

5.2.2 Theme A: Cultural norms and practices contribute to the impact of digital technologies on workplace wellbeing

Theme A discusses how cultural norms and practices contribute to the impact of digital technologies on workplace wellbeing and comprises three sub themes: always-on culture is facilitated by digital technologies and impacts workplace wellbeing; the absence of digital technology guidelines relating to wellbeing contributes to the impact of digital technologies on workplace wellbeing; the lack of integrated support for workplace wellbeing contributes to the impact of digital technologies on workplace wellbeing.

5.2.2.1 Always-on culture is facilitated by digital technologies and impacts workplace wellbeing

Always-on culture is experienced by the majority of the digital wellbeing intervention participants, and was described as intruding significantly on home life, thus impacting both workplace wellbeing and work-life balance. While it is clear that digital technologies are the key facilitators of always-on culture, the origins of always-on culture are identified in the findings as individual and organisational factors such as: workload; part-time study; mixed messages relating to work-life balance; and a sense of responsibility to students. The data also offers evidence that participants have begun to challenge always-on culture. There is a sense from the data that always-on culture is experienced by the majority of participants and that staff are aware of the extent of this issue as represented in the following extract.

> I'm not saying poor me, I'm saying this is something that we're all, we all struggle with….even when we are, we have that flexibility to be at home, it's always work calling us back (FG2p#4).

While the general sense from the focus group discussions is that always-on culture is wide-reaching, participants' experiences vary. For example it appears that there is an expectation for some participants to manage social media after work hours. In contrast, FG2p#3 was "appalled" to learn of the pressures on a colleague from another unit to

manage social media after hours, as this is completely at odds with her own experience as her work hours "are respected religiously".

Always-on culture is typically described as intruding significantly on home life and therefore negatively impacting work-life balance. This impact extends to family members as evident in the following extracts:

> I definitely find that I really rush my time with my daughter in the evenings when I'm under pressure (FG2p#4).

> It's not just for us as workers, but also for family members, especially for kids. When they come all the time asking 'What do you do? I'm working', 'What do you do? I'm working'. 'Oh you're all the time working' (FG2#6).

The findings demonstrate that the reasons for the prevalence of always-on culture are multifaceted and include: workload; mixed messages relating to work-life balance; part-time study; and a sense of responsibility to students. Workload is mentioned explicitly just once in the data, while the impact of workload on always-on culture is implicit elsewhere.

> There are demands placed on people that mean that the job cannot be done in normal hours (FG2#4).

> It's (always-on culture) something that I think I seek. I thought it would make my life a bit easier if I stay on top of emails, if I'm responding quickly to colleagues or to students (FG1#4).

Part-time study is another factor contributing to always-on culture and is described as "sitting in between your work-life balance" (FG1p#2), adding an extra layer of complexity to managing work-home boundaries. This point is emphasised in the follow up response by another focus group participant who highlights the regularity of part-time study for higher education staff.

> The fact that many of us in higher education at various points will be doing additional study on top of…which involves accessing email or needing to check your email, does cause another difficulty for compartmentalising work, home (FG1p#3).

Mixed messages relating to work-life balance communicated through organisational structures and cultural norms are also perceived to contribute to blurred work-home boundaries as illustrated in the following examples. FG1p#4 feels that "explicitly there is no expectation for me to engage with email outside of work hours", but that expectations are "perhaps a little bit less overt" in relation to out-of-hours work. Mixed messages

around work-life balance are linked elsewhere in the findings to the concept of the 'ideal worker', an employee who prioritises work over all aspects of life and is always available for work when needed, thus potentially being 'always-on' (Acker, 1990). Participants perceive 'always-on' culture to be so ingrained in the workplace that staff feel obliged to be 'always-on' to project their alignment with this 'ideal worker norm' and succeed within the organisation.

> People feel they have to align with that norm, or to evidence that norm…so on the one side you're talking about work-life balance but on the other it's like well, you won't succeed unless you do this (FG2p#4).

It is important to note that the participant does not validate the 'ideal worker' norm.

> Well it's a fallacy for a start but (laughs) just to say that I don't buy it. But it's there and it's not just in our kinda sector it's across the board. This is like (pause) a contemporary view of like ideal worker has to work all hours (FG2p#4).

A sense of responsibility to students is identified by several participants as a factor influencing 'always-on' culture in the specific context of higher education. In some cases this sense of responsibility is driven by managerial decisions as evident in the following extract.

> Those of us in professional services…we are being told constantly that the students are engaging 24/7 and…that students want an answer immediately, and this is the type of student we have now (FG2p#1).

Elsewhere, the findings demonstrate that this sense of responsibility stems from a duty of care towards students.

> If a student is reaching out to me, you know, at 9 or 10 or 11 o'clock at night. You know something's going wrong, and you often need an urgent response. And more often than not it's just a need to say, 'I have your email. I hear what's going on and I will help you' (FG1p#4).

The findings indicate that participants question the wisdom of facilitating an 'always-on' culture for students, and are concerned about the wider impact of such a cultural norm on student wellbeing, and on society more broadly as illustrated in the following extracts:

> We're looking at their behaviour, and we're responding to it, rather than saying listen guys, this is not a 24/7 business, relax, you know. We're turned on 24/7 therefore they (students) feel like they should be (FG2p#1).

> Do we need to stand up and resist that notion of 24/7, in the interests of our students? In the interests of society more broadly, you know? Not everything has to be a 24/7 service…Is there an onus on us to say actually, it is not in society's interest for us to be feeding into that? (FG2p#5).

In addition, concern is raised about implicit signals to students around always-culture such as the default assignment submission time (midnight) active in the virtual learning environment.

> Those little things, they all feed into an 'always on' culture…They are future workers and maybe future academics, so you know, we need to watch those little signals that are out there that you know fuel it (FG2p#4).

The need to push back against always-on culture to protect workplace wellbeing also arises in the discussions. FG2p#6 reflects on the ripple impact on colleagues when engaging with 'always-on' practices and how sending "an email after work time, I also put some pressure on some other people to work at those times". An employee rights perspective for resisting always-on culture is proffered by FG2p#3, who suggests that "it is not fair for someone who has worked 9-5 to be on at 11pm replying to tweets".

In summary, the findings relating to always-on culture offer some new perspectives from the context of higher education, while also building on prior work. The findings demonstrate that participants are currently questioning the wisdom of always-on culture and are concerned about the impact of always-on culture on student wellbeing and on society more broadly. In exploring the organisational factors contributing to always-on culture, the findings offer an insight in terms of higher education by uncovering part-time study as complicating the management of work-home boundaries. The findings also reflect existing work that identifies causes for always-on culture such as: workload (Bordi *et al.,* 2018; Chartered Institute of Personnel & Development, 2020), and a sense of responsibility to students (Wilk, 2016). The findings reflect the literature demonstrating that always-on-culture is experienced widely and has a significant impact on workplace wellbeing and work-life balance (Bordi *et al.* 2018; Potter *et al.,* 2021). Furthermore the study offers insight into the perceptions of mixed messages relating to work-life balance in higher education, building on prior work such as Bordi *et al.'s* (2018) research which demonstrates that messages around always-on culture can be both explicit and implicit.

5.2.2.2 The absence of digital technology guidelines relating to wellbeing contributes to the impact of digital technologies on workplace wellbeing

The absence of digital technology guidelines relating to wellbeing contributes to the impact of digital technologies on workplace wellbeing, particularly in relation to managing digital overload relating to three specific technologies - Zoom, email and social media. The

findings suggest that the absence of such guidelines forces employees to take responsibility for managing digital overload, and that managing this challenge individually is perceived as less effective than an organisation-wide approach. The Covid-19 pandemic and resulting increased reliance on these digital technologies has emphasised the need for such guidelines.

Since the Covid-19 pandemic, the use of the Zoom virtual meeting tool has escalated at the research site. This increased usage has impacted workplace wellbeing as evident in the following extract:

> I think when it is overused that it has a deleterious effect on well-being, in other words eight hours of Zoom meetings a day is hell (FG1p#3).

Zoom is perceived as facilitating new expectations relating to scheduling meetings

> There's more meetings being packed into all of our diaries because a lot of them are on Zoom. There wouldn't be that level of expectation or that intensity of meetings if we were in the office I don't think (FG2p#2).

The expectation of increased volume of meetings appears to have continued post-pandemic despite returning to on-campus work: "The intensity of meetings using Zoom just is carrying through" (FG2p#2). This intensity of Zoom meetings is perceived as impacting home life as it: "ripples or travels over to your home life to the point that you are too exhausted to engage with anyone else cause you're so wrecked after a day on Zoom" (FG1p#3).

Furthermore, the absence of guidelines has led staff to adopt individual strategies to manage Zoom overload. For example, FG1p#4 has "started to schedule meetings for half an hour maximum" on Zoom, and feels that she is still "able to achieve the meeting intentions in half an hour as you would in one hour". She suggests that creating individual strategies can allow staff to:

> Start modelling or managing-up ways in which we are engaging with tools to ensure that we're not stuck on x amount of Zoom meetings, or not instantly responding to the plethora of emails coming our way.

For others, the preference is for institutional guidance, as highlighted in the following survey comment.

> There is work to be done on overuse of Zoom, particularly Zoom meetings - but I suspect that policy may be needed to address that" (SR#8).

Participants have similar concerns in relation to expected email response time. The lack of guidelines in respect of email response time makes it "difficult to stop you from checking your email frequently" and results in a perceived "culture of rapidfire responses to emails" (FG1p#3). The sense that guidelines might be more effective than individual strategies is emphasised.

> I think that we can try as individual warriors to spread that word, but I think it would be much more successful if both at institutional and unit level that message was heard, was repeated and was authentic…and was consistently adhered to right across the board (laughs) (FG1p#3).

While email technology has been used in higher education for several decades, the impact on email response time due to the intensified reliance on email during the Covid-19 pandemic is evident in the findings.

> I found the start as well because of your lack of visibility to your colleagues, you know cos you were at home, I found a pressure to respond instantly to emails as well (FG1p#1).

The need for guidelines relating to social media is also discussed in the findings.

> There should be a bigger picture look like at it, like the demands of being active on social media vs what exactly is expected from you in your job description and how many hours of your attention your employer or your career deserves (FG2p#3).

The lack of guidelines on social media is perceived as potentially leading to an always-on culture and the expectation to engage with social media after hours.

> Just because it is possible for me to be on my couch engaging on Twitter, maybe I don't (sigh) reasonably have to do that, that expectation I agree with FG2p#5, that we really need to push back on that expectation…but not only employees, but employers as well (FG2p#3).

In summary, the findings demonstrate that the absence of digital technology guidelines relating specifically to workplace wellbeing exacerbates the impact of digital technologies on workplace wellbeing in higher education by creating challenging expectations relating to connectivity and engagement through Zoom, email and social media. These findings reflect concerns articulated elsewhere about the impact on workplace wellbeing of digital overload relating to email (Barber & Santuzzi, 2015; Kushlev & Dunn, 2015) and Zoom (Chartered Institute of Personnel & Development, 2020; Shosan & Whert, 2021). Existing work provides evidence of the growing use of social media in the workplace (Chartered Institute of Personnel & Development, 2020) and the significant impact of social media (Alutaybi *et al.,* 2019; Nguyen, 2021). The findings of this study offer insight into the

potential impact of social media on workplace wellbeing where clear guidelines on engagement are not available. Furthermore, the findings suggest that the absence of guidelines relating to digital technologies places pressure on staff to manage digital overload as "individual warriors". In line with prior work (Barber & Santuzzi, 2015; Kushlev & Dunn, 2019), an individual approach to managing the challenges of digital technologies is perceived as less effective than an organisation-wide approach. Throughout the discussion, it is evident that the Covid-19 pandemic has highlighted the need for guidelines relating to the impact of digital technologies on workplace wellbeing due to the increased reliance on these technologies.

5.2.2.3 The lack of integrated support for workplace wellbeing contributes to the impact of digital technologies on workplace wellbeing

The lack of an integrated approach to supporting workplace wellbeing creates conflicts for staff between work commitments and workplace wellbeing interventions, thus creating barriers to participate in, and benefit from workplace wellbeing interventions. This disconnected approach to supporting workplace wellbeing has resulted in a sense of cynicism towards current workplace wellbeing interventions which in itself poses an additional barrier to participating in, and benefiting from interventions. Suggestions for integrating workplace wellbeing support, including support specifically relating to digital technologies, are offered in the findings. These suggestions relate to integrating conversations around workplace wellbeing within interventions and workplace structures and local level marketing of interventions.

The lack of integration of workplace wellbeing support into organisational structures has resulted in participants struggling to participate in interventions due to conflicting work commitments and professional development opportunities as evident in the following extracts.

> Feeling a certain pressure to pack the diary full of activity, be that running events, or attending events is a barrier to participating in this (digital wellbeing intervention) (FG1p#3)

> I had to fight with myself for each of the four occasions[18] and I think I even had to miss one of the weeks, and that was always because there were work, competing work priorities (FG2p#2)

FG1p#1 struggled to commit to the digital wellbeing intervention in terms of engaging with the content beyond the live workshops, and found that the workshop content was "an awful lot to take in within, you know, the time we were allotted[19]". The virtual learning space created to support the digital wellbeing intervention is described as "the antidote to that barrier", allowing time to engage with the learning independently. On the other hand, the ability to work independently appears to have unintentionally created a conflict relating to work-home boundary management and engaging with learning outside of normal working hours.

> I think a hilarious consequence of being very digitally disciplined is that I'd say I'll do some digital technology stuff now, but then I'd say I shouldn't be doing any work now (laughs).

The perception that workplace wellbeing support is not integrated into organisational structures has led to cynicism towards current workplace wellbeing interventions, as illustrated in the following examples. Workplace wellbeing interventions provided since the Covid-19 pandemic such as yoga and mindfulness are acknowledged as potentially valuable, but diminished by the lack of dedicated time to participate during the working day.

> I found myself feeling resentful about them, and kind of thinking, I really just can't go to this, it's on at lunchtime, I've too many other things to do. If I want to chill out I'll manage to get out for a walk for half an hour (FG2p#5).

Similarly, the potential of current workplace wellbeing interventions such as a healthy workplace programme is acknowledged, but need to be "bolstered by messages and approaches to management that model that (the healthy workplace)" (FG1p#3).

It is interesting to note that the cynicism relating to workplace wellbeing interventions does not extend to the digital wellbeing intervention. FG2p#3 distinguishes the digital wellbeing intervention from other workplace wellbeing supports as it revolves around a colleague's

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[18] The digital wellbeing intervention comprised four separate units of learning.

[19] The digital wellbeing intervention workshops were scheduled in 90 minute segments to run over standard lunchtime for staff to enable participation. This scheduling purposely aimed to maximise the opportunity for staff to participate based on prior experience of professional development, highlighting the lack of integration of time for professional development within the university.

research studies and indicates that one of the reasons she participated was due to "professional and academic solidarity" with the researcher. She suggests that "I might be very cynical about a course like this if it came from the university, human resources, learning and development" and expands on the reason for this cynicism by describing a recent experience of professional development.

> I attended a session on how to….manage stress in the face of uncertainty or something like that. I really enjoyed it and I learned important stuff, but also the main source of uncertainty in my life at that time were decisions made by the university. So I kept thinking (laughs) this is all grand but maybe don't make these decisions that cause so much uncertainty for us, and then give us the training to alleviate that.

An alternative reason for this lack of cynicism towards the digital wellbeing intervention is courtesy bias, as the researcher facilitated the focus group interviews and therefore participants may have felt obliged to comment positively on the intervention.

While a sense of cynicism is evident across the discussions around current workplace wellbeing support, not everyone agrees. A different perspective is offered by FG2p#1 who felt "very well supported" in relation to workplace wellbeing since the Covid-19 pandemic.

Participants make explicit calls for improved integration of workplace wellbeing support and voice frustration regarding the compartmentalisation of wellbeing from work practices.

> It's almost as if this is a separate thing that really doesn't have anything to do with the rest of your life, and I think there just needs to be more integration of the effect that these practices have across your work and professional life and home life (FG1p#3).

> I'd like to see workplace well-being integrated into CPD[20]. And I think what would be nice also is if this would be initiated by a line manager or team lead to kind of (pause) incorporate that and check in with their staff to see how are you doing and what improvements can be made (FG1p#2).

A number of suggestions on how to integrate workplace wellbeing support are offered throughout the findings. Providing opportunities for conversations around workplace wellbeing is a recurring suggestion as evident in the following extracts. The opportunities for conversations provided through the digital wellbeing intervention are specifically referenced as an example of authentic support for workplace wellbeing.

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[20] Continuous professional development

> It (digital wellbeing intervention) opens up those kinds of big conversations that need to be had. But more importantly and more sustainably, trying to ripple that out. How can we have those conversations with other people and maybe impact the wider organisation. And certainly for me a whole lot more impactful than any amount of yoga and mindfulness or anything like that (FG2p#5).

> I think it's really useful you know in terms of the workshops even just having conversations where we acknowledge that we need to unwind, that we will unwind, that we commit to that (FG2p#4).

> I really, really valued the forum and the space for discussion that this created, and the input from colleagues and the dialogue. That was honestly one of the best parts for me. So please don't turn this into an online course that you click your way through, because that wouldn't have… even 10% of the value that we got from the conversations (FG2p#3).

Participants are clear on the value of building on workplace wellbeing interventions by integrating opportunities for continued conversations into daily work routines such as team meetings as exemplified in the following comment

> It's ok to… have interventions but… we just need to be having conversations, and like more conversations like this. And kind of changing the way we think about work, life and the interface between them (FG2p#4).

While the integration of conversations on workplace wellbeing are to the fore in terms of suggestions to improve integration, marketing of workplace wellbeing interventions at local level is also described as potentially improving participation and engagement.

> I think those kinds of general staff emails you look at them and…you think 'oh yes, that's interesting', but you don't take much action on them. But if you take it at a more personal level, or at a unit level you're more inclined to take action (FG1p#2).

In summary, the fragmented support for workplace wellbeing is perceived as creating barriers to participate in, and benefit from, workplace wellbeing interventions. The key barrier resulting from this lack of integration is the time available to staff to participate, mirroring existing work identifying time as a significant barrier to participating in workplace wellbeing interventions (Brady & Wilson, 2021; Rich *et al.,* 2021). The findings build on existing work by offering an insight into how support for workplace wellbeing could potentially perpetuate always-on culture by pushing staff to engage with always-on culture in order to gain skills to manage work-home boundaries. The majority of (but not all) study participants frame existing support for workplace wellbeing somewhat cynically, mirroring existing literature questioning the authenticity and intention of management in relation to workplace wellbeing interventions (Cvenkel, 2020; Holmqvist, 2009). The findings contribute to existing work by identifying a simple solution for better integration

of workplace wellbeing support such as: embedding conversations around workplace wellbeing in everyday work practices; and marketing interventions at local level. The findings offer a potentially useful insight for future workplace wellbeing support by demonstrating that perceptions of wellbeing interventions could be influenced by relationships between the facilitator and the participants.

5.2.2.4 Summary of theme A

Theme A provides evidence that three specific norms and practices contribute to the impact of digital technologies on workplace wellbeing: always-on culture; the absence of policy/guidelines relating to digital technologies; and lack of integrated support for workplace wellbeing. The findings offer insight into how these organisational contextual factors impact digital wellbeing and workplace wellbeing in higher education.

Several organisational and individual factors are identified as contributing to an always-on culture in higher education. Some of these factors reflect prior work such as workload (Chartered Institute of Personnel & Development, 2020); mixed messages relating to work-life balance (Bordi *et al.,* 2018); and a sense of responsibility to students (Wilk, 2016). The findings offer new insights by highlighting part-time study as an additional contributing factor to always-on culture. Overall the findings align with Krause (2018) who suggests that always-on culture emerges from “a complex bundle of internal and external motives" (p.238). Furthermore the findings suggest that staff in higher education question the wisdom of always-on culture, and are concerned about the impact of always-on culture on student wellbeing and on society more broadly.

The findings offer evidence that the absence of guidelines relating to digital technologies such as Zoom, email and social media exacerbates the impact of digital technologies on workplace wellbeing in higher education. Lack of clarity in relation to using these technologies can lead to digital overload, and can potentially lead staff to engage with an always-on culture. The potential impact of such digital overload reflects concerns articulated elsewhere about the impact of these technologies on workplace wellbeing in other contexts (Bordi *et al.*, 2018; Chartered Institute of Personnel & Development, 2020; Shosan & Whert, 2021) The data demonstrates that the Covid-19 pandemic and remote working experience has intensified the need for guidelines due to the increased reliance on digital technologies. In the absence of guidelines, staff are obliged to manage the impact of

these technologies on their workplace wellbeing through individual approaches. Applying individual strategies is perceived by participants as placing undue pressure on individuals, and is also viewed as a less effective approach than organisation-wide guidelines.

The findings demonstrate that the lack of integrated support for workplace workplace wellbeing creates barriers to participating in workplace wellbeing interventions in higher education. Time is the key barrier identified in the findings, reflecting work in other contexts (Brady & Wilson, 2021; Rich, Aly, Cecchinato *et al.,* 2020). In addition, the lack of integration of workplace wellbeing support has led to scepticism regarding current workplace wellbeing interventions and this scepticism presents an additional barrier to participation. This finding reflects prior work that questions the motives of management in providing workplace wellbeing support (Cvenkel, 2020; Holmqvist, 2009). Embedding conversations around workplace wellbeing in everyday work practices such as team meetings is suggested as a means to improve the integration of workplace wellbeing support. Marketing workplace wellbeing interventions at local level is suggested to improve engagement of staff. Furthermore the findings suggest that cynicism in relation to workplace wellbeing interventions might be addressed by strengthening the relationship between the facilitator and the participants.

5.2.3 Theme B: A digital wellbeing intervention impacts workplace wellbeing

5.2.3.1 Introduction

Theme B focuses on the impact of the digital wellbeing intervention and is presented as three sub themes: a digital wellbeing intervention supports staff to manage the challenges presented by digital technologies; a digital wellbeing intervention supports staff to understand the potential benefits of digital technologies; and a digital wellbeing intervention can support overall workplace wellbeing.

In focusing on the impact of the digital wellbeing intervention, theme B speaks to the impact of the intervention on individual digital wellbeing skills/capabilities. Throughout the findings the discussion broadens to connect the impact of digital technologies to overall workplace wellbeing, thus providing evidence of the influence of digital wellbeing on overall workplace wellbeing.

5.2.3.2 A digital wellbeing intervention supports staff to manage the challenges of digital technologies to workplace wellbeing

Three specific challenges presented by digital technologies to workplace wellbeing emerged from the literature review: work-home boundaries (Rich *et al.,* 2021; Bordi *et al.,* 2018; Cecchinato, Cox & Bird, 2015); digital overload (Gui & Büchi, 2021; Potter *et al.,* 2021); and digital distraction (Chartered Institute of Personnel & Development UK, 2020; McCarthy, 2020). There is evidence throughout the data to suggest that the digital wellbeing intervention impacted participants' capability to manage these challenges in the eight-twelve weeks between participating in the digital wellbeing intervention and the data collection. Furthermore, the intervention also prompted participants to reflect upon the significant impact that digital technologies can present to workplace wellbeing, thus emphasising the importance of managing these challenges. Finally, the findings suggest that participants feel personally responsible for managing the challenges presented by digital technologies.

5.2.3.2.1 Managing work-home boundaries

The findings demonstrate that the digital wellbeing intervention impacted participants' capability to manage work-home. There is evidence that: participants' attitudes towards managing work-home boundaries have been impacted by the peer discussions; participants' awareness of the importance of work-home boundaries improved; and participants developed specific strategies to manage work-home boundaries which they applied in practice in the eight-twelve weeks between completing the intervention and data collection.

The most significant impact of the digital wellbeing intervention appears is shift in attitudes towards managing work-home boundaries as evident in the following extracts.

> I do still sometimes look at emails in the evenings but I think I do it less now, especially since I realise that some people have a clear policy of 'stopping' email after 5 pm, which I think is a very good idea (SR#8)

> I am more aware of the need to detox and managing (sic)"the guilt" when I'm not connected - realising that feeling guilty is mad! (SR#9).

The intervention has also emphasised the importance of managing work-home boundaries in terms of work-life balance.

> I have more awareness now about my use of digital technologies and how they impact my emotional wellbeing. I am careful not to log on to work emails and/or apps in the evening as I know this is eating up into my relaxation time. I also know that this can contribute to burnout and that I need time to relax and recharge (SR#7).

At times, this awareness reveals a sense of individual responsibility for managing the challenges of work-home boundaries as evident in these excerpts.

> It really led me to be a little bit more critical of the expectations that I place on myself, with regards to, you know, ensuring that the boundaries are put in place but actually I feel it's my responsibility to sustain those boundaries (FG1#4).

> I think what came through to me strongest from the workshops…..was… the importance of self control around managing distractions, managing boundaries (FG2#2).

The findings provide evidence that participants developed micro-boundary strategies to manage work-home boundaries and applied those strategies in the eight-twelve weeks post-intervention. SR#2 reports that organising all work related applications into one mobile phone folder "has really helped me establish a stronger work-life balance and limit the amount of time I spend working outside of work hours". The peer learning experience also supported this respondent to use another micro-boundary skill - using out of office auto responses.

> I gleaned some useful tips like putting on an ooo (out of office) with something along the lines of "I will return on X date. If this email is important please resend your email on X date" (SR#2).

While the intervention appears to have supported the development of specific skills, the findings also suggest that the intervention could be improved in this respect.

> I would love to have some strategies to disconnect my work e mail (sic) on my phone while on leave without losing access to other related apps (SR#3).

It also appears that participants' confidence to manage and work-life balance has been enhanced.

> I feel empowered to manage my own work/life balance using a wider range of tools in a more effective way (SR#13).

> The idea of taking responsibility for my actions instead of blaming digital technologies. I feel I am more in control of work now (SR#1).

In summary, the findings demonstrate that the digital wellbeing intervention supported staff to manage the challenges presented by digital technologies to work-home boundary

management by: modifying attitudes to managing work-home boundaries; raising awareness of the importance of managing work-home boundaries; and supporting staff to develop micro-boundary strategies to manage work-home boundaries. There is evidence that peer learning was key to the impact of the intervention in particular regarding participants' attitudes to work-home boundary management. The findings also provide evidence that this attitude change and improved awareness of the importance of managing work-home boundaries has improved participants' confidence and capability to manage work-home boundaries, and that participants have applied micro-boundary management strategies in practice in the eight-twelve weeks since completing the intervention. These findings build on prior work that suggests interventions can support staff to manage work-home boundaries (Cecchinato, 2018; Rich, Aly, Cecchinato *et al.,* 2020), by offering insight into work-home boundary management in the specific context of higher education. In addition, the findings of this study provide evidence of the impact of a digital wellbeing intervention beyond knowledge acquisition towards behaviour change, an area identified as a gap in prior literature (Themelis & Sime, 2019).

5.2.3.2.2 Managing digital distraction

The findings demonstrate that the digital wellbeing intervention impacted participants' ability to digital distractions by: providing guidance about specific 'pre-commitment strategies' (Fasoli, 2021) such as managing device notifications and device connectivity; and stimulating reflection on the impact of digital distraction on workplace wellbeing. The findings also suggest that managing digital distractions is a challenging task, and that participants accept personal responsibility for managing digital distractions.

There is evidence in the findings that participants applied specific pre-commitments strategies discussed in the digital wellbeing intervention and applied some of those strategies in practice in the weeks following participation. SR#3 reports using three different strategies to manage digital distractions post-intervention: managing device notifications; managing device connectivity; and checking emails at specific times.

> Some small changes are starting to make a big difference e.g. using my phone settings to turn off notifications/ use do not disturb between 10pm and 6am managing e mail [sic] - trying to check at certain times (SR#5).

FG2p#3 indicates that "little things, like the digital notification switching off" are supporting her to manage digital distractions. She is also using mobile applications to "let

me know how much time I'm spending on emails" and is spending less time on emails as a result. Using digital applications to manage digital distraction was viewed differently by SR#12 who doesn't like "having too many apps", preferring to manage digital distractions by avoiding particular technologies or managing time with those applications - "I tend to avoid the ones that distract me too much or set a time limit with their use".

The 'deep work' disconnection strategy (Newport, 2016) explored in the workshops was also applied in practice post-intervention. The 'deep work' strategy involves focusing on individual tasks and disconnecting from digital technologies to focus on that one task.

> I have started to implement the 'deep work' ethic and find it a really useful as i [sic] block out periods of time and focus solely on one task" (SR#1).
>
> I'm being more ruthless about downtime and committing to more focussed time (SR#11).

The digital wellbeing intervention prompted participants to reflect on the impact of digital distractions on workplace wellbeing as evident in the following extracts. Both of these comments suggest that the individuals feel responsible for managing digital distractions.

> It has made me think about time management in general and be wise to the amount of hours I spend wasting time online (SR#12).
>
> (I'm) aware of how much screen time i [sic] use that is not useful. paying [sic] attention to the time i [sic] am actively "wasting" browsing" (SR#14).

The findings illustrate that managing digital distractions is challenging for participants due to internal and external factors. For example, FG1p#1 feels that her own propensity towards distractions leads her to being digitally distracted, but is also aware that technology is designed to distract.

> Sometimes it might not be the digital technology that distracts me, it might be me wanting distraction. Then I go on the digital technology and then 4 hours pass…you know that it's kind of addictive, they've designed them so that you keep clicking on it (FG1p#1).

SR#11 is managing digital distractions by simply leaving her phone out of physical reach. This approach is described as challenging, not from the participant's point of view, but due to the reaction of others.

> That works fine for me but I notice people get a bit annoyed when I miss calls or don't respond for several hours! But that is not enough to stop me and I certainly aim to continue distancing myself and my phone (SR#11).

In summary the findings demonstrate that the digital wellbeing intervention supported participants' capability to manage digital distractions through the development of specific strategies and by prompting discussion on the impact of digital distractions on workplace wellbeing. These findings reflect existing work that suggests a digital wellbeing intervention can support staff to develop skills to manage digital distractions (Rich *et al.,* 2020; Gui *et al.,* 2019) and provides evidence that these skills can result in actual behaviour change.

5.2.3.2.3 Managing digital overload

The findings offer evidence that the digital wellbeing intervention supported participants' capability to manage digital overload in two ways: by facilitating the sharing of digital overload experiences with colleagues; and re-engaging participants with the importance of disconnecting from devices and applications in respect of workplace wellbeing.

The findings suggest that the discussions around digital overload during the intervention rollout supported staff by offering opportunities to share their experiences with colleagues. In the following extracts, specific strategies are not mentioned but the shared conversations are framed as 'interesting' and 'enlightening'.

> There was some very interesting discussion in one of the sessions around email expectations for sure, and it was very interesting to hear the variety of approaches that were suggested (FG1p#3).

> The opportunity to reflect on and discuss the challenges many of us are facing with colleagues was enormously helpful - the discussions on work-home boundaries, overuse of Zoom, and management of emails/email expectations were enlightening. I found it interesting to get insight into the work practices of other parts of the university - and realise how different other units/areas are! (SR#8).

The intervention also served to remind participants of the value of disconnecting for devices and/or applications, as evident in the following data.

> Looking at the app on my phone to let me know how much time I'm spending on emails, that I'm doing less than I was. I mean I've still fallen off the wagon lots of times, but that awareness is definitely, definitely helping there (SR#8).

> Yes, I've given much more consideration to my working day. I aim to time manage better, allowing time to carry out my work duties and then take time-out form (sic) digital devices. I've tired (sic) to become more efficient in my work time so I can give more time to my digital-free life (SR#8).

The findings also suggest that the intervention reminded participants of disconnection strategies that they previously engaged with such as digital detoxes and screen-free time. For example, the digital wellbeing intervention has helped SR#13 to "become even more intentional and selective in my use of digital technologies in my free time".

In summary, the findings demonstrate that the digital wellbeing intervention supported participants' ability to manage digital overload by: facilitating the sharing of digital overload experiences with colleagues; and re-engaging participants with the importance of disconnecting from devices and applications. These findings reflect prior work that suggests a digital wellbeing intervention can support staff to manage the challenges of digital overload (Soucek & Moser, 2010) by offering evidence of the impact of the intervention on behaviour change. Furthermore, the findings offer an insight into the value of peer discussion activities to support the management of digital overload in the higher education workplace.

5.2.3.3 A digital wellbeing intervention can support staff to understand the positive potential of digital technologies

We know from previous studies in other contexts that digital wellbeing interventions can support participants to develop skills to manage the challenges presented by digital technologies to wellbeing (Gui *et al.*, 2018; Rich, Aly, Cecchinato *et al.,* 2020). The findings of this study demonstrate that a digital wellbeing intervention can also support participants' understanding of the positive potential of digital technologies by re-focusing participants' attention on the positive potential of digital technologies. The evidence suggests that this was achieved in several ways: through the use of the model of digital wellbeing in the workplace developed specifically for this study; by prompting reflection on the benefits of digital technologies in the workplace; and by introducing participants to a range of previously unexplored digital technologies.

5.2.3.3.1 The model of digital wellbeing in the workplace

Evaluations of models of workplace wellbeing such as self determination theory and the job resources-demands model have guided research studies theoretically, rather than guiding the content and structure of training and other interventions (Bakker & Demerouti, 2017). The findings of this study indicate the model of digital wellbeing in the workplace,

developed to to support this study challenges participants' assumptions of digital technologies and re-focused attention on the benefits of digital technologies.

The model is highlighted a number of times by participants as a particularly useful aspect of the digital wellbeing intervention. Specifically the data suggests that the model successfully framed digital wellbeing as comprising both the negative and positive impact of digital technologies on workplace wellbeing. Furthermore, there is evidence that the model challenges participants' assumptions about digital technologies.

> I think it (the model) set up the course content, the subsequent discussions, to be balanced, to be discursive and not… a sense of you know 'all technology is bad', all technology is good. It was a very balanced approach to the reality of working with digital technologies (FG1p#4).

> I found that model…very, very, useful, one of the memorable things. I think in a way it nearly challenged me…I was anticipating, digital technology is the baddie here, and, so that definitely stuck with me, that notion that, you know there are the benefits of educational technology as well (FG2p#5).

The findings also suggest that using the model within the digital wellbeing intervention supported participants' understanding of the positive potential of digital technologies.

> Everything was on the fence. It was to see how people interpret their feelings on whether email and other technologies are a positive or a negative thing (FG1p#2).

There are several examples in the findings to illustrate how the structure of the intervention based on the dual aspect of the model refocused attention on the positive potential of digital technologies.

> My initial reaction when I started was, oh digital technologies are taking over my life, it's a distraction, there's no boundaries. But the more I think about it, the more I'm kind of seeing the positives, and now I think I've started from 'they're making my life hell' (laughs) to now kind of thinking about them as an enhancement (FG2p#1).

The digital wellbeing intervention emphasised "the positives of digital technologies in relation to wellbeing" for SR#13, and served as a reminder for "how much joy I derive from reading library ebooks on my phone or staying in touch with loved ones via whatsapp, to name just a couple of examples".

In summary, the model of digital wellbeing in the workplace was perceived by participants as a useful tool for understanding the positive potential of digital technologies by challenging their existing perceptions of digital technologies as a challenge to workplace wellbeing. The model and the structure of the intervention based on this model also served

to remind participants of the positive potential of digital technologies. The findings of this study contribute to evaluations of digital wellbeing workplace interventions by providing evidence of the impact of using such a model to support an understanding of the relationship between digital technologies and workplace wellbeing.

5.2.3.3.2 Lessons from the pandemic - flexible working & effective communication

The digital wellbeing intervention prompted participants to reflect on the positive potential of digital technologies with reference to the remote working experience resulting from the Covid-19 pandemic. Two specific benefits are highlighted: flexible working; and connecting with colleagues. The limitations of each of these benefits are also articulated.

The potential for digital technologies to support flexible working is evident in the findings both explicitly and implicitly. The general sense from the data is that digital technologies are key to flexible working arrangements and support workplace wellbeing and work-life balance. FG1p#4 explicitly states that digital technologies "give us the flexibility to do our work remotely". FG2p#5 suggests that remote working facilitated through digital technology "undoubtedly offers huge flexibility in terms of things like getting out for a walk in the middle of the day", highlighting how flexible working can positively impact work-life balance. FG2p#4 suggests that flexibility can even be beneficial when workload is perceived as challenging.

> All research will say that when you have that element of control, you can deal with the stress or the strain of your work (FG2p#4).

The disparity between the flexible working arrangements available to those in academic roles compared to those in non-teaching roles is acknowledged in the findings and it is suggested that the remote working experience can pave the way for more autonomy for those in non-teaching roles in higher education post-pandemic.

> As we kind of adjust to life post-pandemic, maybe it's important for the institution to be looking at roles where there wasn't as much autonomy as there might be in an academic role, and harnessing the benefits, the, the undoubted benefits of having that autonomy (FG2p#5).

Furthermore, there is evidence that traditional concerns about remote working impacting negatively productivity were challenged during the enforced remote working period of the pandemic, reinforcing the previous comment in relation to the potential for offering more flexibility to those in non-teaching roles.

> I don’t think I was less productive because I was doing that [flexible working], I was just managing my time better, because I had this incentive that I don’t want to do work in the afternoon with my kids hanging out with me (FG2p#3).

While the benefits of flexible working are clear in the data, the findings also raise concerns about transitioning between remote and on campus working. Participants found the initial move to remote working somewhat challenging or “discombobulating” (FG1p#1). Others have found the subsequent shift back to the office difficult.

> I’m really struggling with being back in the office and not being able to be that productive and seeing the sociability thing as a distraction, and as an irritant (FG2p#2).

The findings also highlight Zoom as a particularly effective communication tool during the Covid-19 pandemic as illustrated in the following extracts.

> Instead of bouncing emails back and forth, just suggest you know, let's do a Zoom meeting, everyone was so used to zoom that it was easier to talk one-one and resolve issues (FG1p#2).

> Social Zooms and formal Zoom meetings, em, gave me the opportunity to interact and to get to know colleagues, my new colleagues, in a way that I could not have achieved by working remotely via email or instant messaging for sure (FG1p#2).

Furthermore, digital communication tools allowed participants to enjoy colleagues' company during the pandemic.

> You know, my husband sometimes says to me, ‘you’re having a hilarious time with that Zoom, I can hear, you know, all kinds of laughing’ (laughs) (FG2p#5).

Fellow focus group participants react to this comment with agreement and laughter, suggesting a shared experience. Similarly, the findings suggest that while the transition to Zoom was initially challenging it was an adequate replacement for face-to-face communication for informal collegial interactions.

> We had to find a way to replace…I have a question. I'll just get up to ask my colleague and pop over to them and ask them. It was very hard to start doing that with Zoom but I thought it did work sometimes (FG1p#2).

Digital technologies are described as limited in certain contexts such as unfamiliar colleagues, as highlighted in the following comment.

> Close colleagues - I think it's quite easy to maintain good relationships with them through tech (sic), through digital platforms. But there are lots of other relationships that we have… that it’s much harder to have casual conversations (FG2p#4).

Despite the increased engagement with digital technologies during remote working, and the value placed on these technologies, it is clear from the findings that the face-to-face context is the preferred mode for connecting with colleagues and with students, as represented in the following extracts.

> To see somebody online you need to send them an email, wait for them to see the email, and then to answer the email, and then to have the time to set it up. It's a bit difficult. But in work, he is just beside you, one word 'are you free for a coffee?, or for a walk?' (FG2p#6).

> I really do truly believe that you have to be, (pause) walking among them (students), or hearing snippets in the coffee space, you get a sense of, like…. This week they are upset and you can feel that obviously, there's been building work going on… (FG2p#1).

> The importance of face-to-face is even more pronounced when intergenerational, like students and staff (FG2p#2).

Despite the strong sense from the data that participants privilege the face-to-face context in terms of developing and nurturing workplace relationships, the return to campus and to face-to-face communication post-pandemic has been challenging for some participants. Specifically, several focus group participants have struggled to find a balance between the social aspect of working on campus and being distracted as illustrated in the following examples.

> Because it's those incidental conversations that are so valuable. But I'm having to recalibrate into that and seeing that as valuable, as important eh, part of being on campus, being at work or whatever but (FG2p#5).

This internal battle between productivity and valuing communication and connection at work resonates with FG2p#2 who feels that in the office "I won't be as productive", while acknowledging that this perspective is "looking at productivity in too narrow a focus anyway".

In summary, the digital wellbeing intervention prompted participants to reflect on the lessons learned from the Covid-19 pandemic and enforced remote working experience including the opportunities to offer flexibility to staff in higher education beyond those in academic roles, and the limitations of digital technologies in terms of effective communication. A preference for face-to-face communication is tempered by findings indicating that the return to the office has also been challenging for staff due to the social distractions in the on-campus workplace.

5.2.3.3.3 Introducing new digital technologies

A selection of technologies were introduced to participants during the digital wellbeing intervention. There is some evidence emerging in the post-intervention survey data to suggest that participants engaged with new digital technologies to support their workplace goals in the eight-twelve weeks between completing the intervention and data collection, or plan to use those tools in the future. Specific tools are mentioned such as: collaboration tools (SR#4); productivity tools (SR#8 & SR#10); and voice-to-text functionality (SR#9).

5.2.3.4 A digital wellbeing intervention can support overall workplace wellbeing and general wellbeing

In addition to demonstrating the impact of the digital wellbeing intervention on workplace wellbeing relating to digital technologies, the findings also suggest that the digital wellbeing impacted overall workplace wellbeing. The evidence for this claim relates to the links that participants make between digital wellbeing and overall workplace wellbeing.

The following extracts typify the links that participants make between digital wellbeing and overall workplace wellbeing, and general wellbeing. In addition, these extracts emphasise the importance of digital wellbeing in respect of workplace wellbeing and general wellbeing. These comments were forthcoming when participants were invited to comment on their motivations to participate in the digital wellbeing intervention.

> Digital wellbeing, it's really actually about wanting to be well generally. I mean digital technology is such a large part of my life both professional and personal. I'm always looking for ways and means to be well, to be happier, more fulfilled in my work and in my life (FG1p#4).

> We've heard about wellbeing for a long time but we don't talk about digital wellbeing, and I suppose everybody's life is very much around digital technologies now so, so why not why not think about digital wellbeing (FG1p#2).

> What I knew was, that the whole digital piece is playing a much bigger part in all of our lives personally and professionally (FG2p#2).

The findings also indicate that the digital wellbeing intervention highlighted the extent of challenges to wellbeing generally, and suggests that the Covid-19 pandemic emphasised the importance of work-life balance.

> I also very much appreciated seeing all the scholarly literature that framed the discussion - it brought it home to me how widespread wellbeing issues are - and

> how long they've been around. While Covid has been a major accelerant, the fact is that work-life balance and other issues were there long before Covid (SR#8).

In summary, the findings demonstrate the impact of the digital wellbeing intervention on workplace wellbeing in a general sense by offering evidence that participants perceive digital wellbeing as an important aspect of workplace wellbeing and general wellbeing. These findings reflect existing models and definitions of digital wellbeing that emphasise the connections between digital wellbeing and overall wellbeing (Burr & Floridi, 2020; JISC, 2019a) and advance this work by offering evidence that staff in higher education understand the importance of digital wellbeing in relation to workplace wellbeing and overall wellbeing.

5.2.3.5 Summary of Theme B

Theme B provides evidence that the digital wellbeing intervention supported staff digital wellbeing on two fronts: in managing the challenges presented by digital technologies; and in understanding the positive potential of digital technologies. The findings demonstrate that the digital wellbeing intervention impacted participants' capability to manage the challenges presented by digital wellbeing including: work-home boundaries; digital overload; and digital distractions. These findings offer an insight into the specific context of higher education, and echo prior work outlining the potential of digital wellbeing interventions to support staff in managing the challenges of digital technologies in other workplace contexts (Cecchinato, 2018; Rich, Aly, Cecchinato *et al.,* 2020). Peer learning activities were identified in the findings as vital to the impact of the intervention. The discussions are imbued throughout the findings with participants' perceived personal responsibility for managing digital wellbeing. This was an unintended consequence of the digital wellbeing intervention, as it was designed to emphasise a shared responsibility for digital wellbeing between the workplace organisation; technology designers; and the individual, informed by the literature (JISC, 2019a; 2019b; 2019c; Biggins & Holley, 2020; Potter *et al.*, 2021).

The findings also demonstrate that the digital wellbeing intervention supported participants to understand the positive potential of digital technologies by re-focusing participants' attention on the positive potential of technologies, and by exploring new technologies. The intervention also prompted participants to reflect on their increased use of technologies

used during the Covid-19 pandemic and enforced remote working experience, and the benefits of technologies during that time. The potential of digital technologies identified in the findings reflect the literature and include: flexible working arrangements (Cecchinato, 2016; Sang *et al.,* 2015; Rich *et al.,* 2020) communicating and connecting with colleagues (Bordi *et al.,* 2018) and efficiencies (Bordi *et al.,* 2018; Potter *et al.,* 2021). The model of digital wellbeing in the workplace was identified in the findings as a key means of supporting this understanding.

5.3 Comparing & Contrasting the Quantitative and Qualitative findings

5.3.1 Introduction

This final section lays the ground for a discussion of the findings in relation to the research questions by interrogating the qualitative and quantitative findings to identify comparisons and contrasts in relation to each research question:

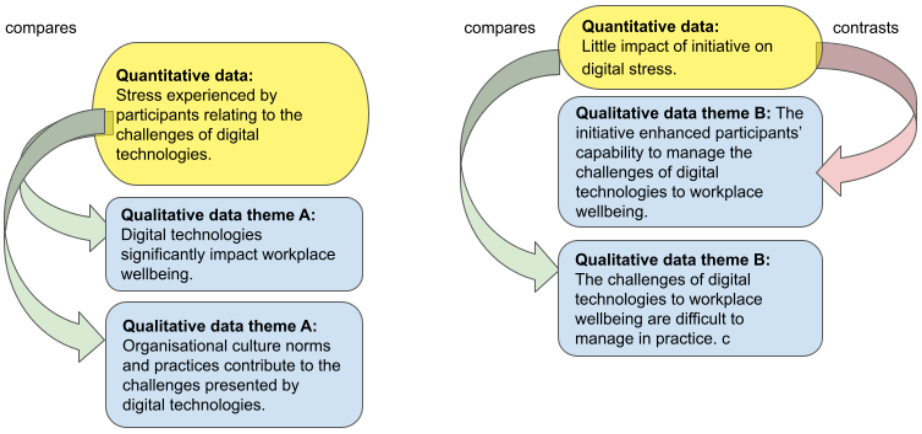
1. Can/how can a digital wellbeing intervention support staff to manage the challenges presented by digital technologies in the specific context of higher education?
2. Can/how can a digital wellbeing intervention support staff to understand the positive potential of digital technologies in the specific context of higher education?
3. Can/how can a digital wellbeing intervention support overall staff workplace wellbeing in the specific context of higher education?

5.3.2 RQ#1: Can/how can a digital wellbeing intervention support staff to manage the challenges presented by digital technologies in the specific context of higher education?

The key findings in the quantitative data relating to RQ#1 are: a percentage of participants report stress relating to the challenges of digital technologies; and the digital wellbeing intervention had little impact on this stress. The key findings from the qualitative data are: digital technologies significantly impact workplace wellbeing; the digital wellbeing intervention enhanced participants' capability to manage the challenges of digital

technologies; managing these challenges is challenging in practice; and workplace cultural norms and practices contribute to the challenges presented by digital technologies.

Figure 5.14 Data integration RQ1(a)

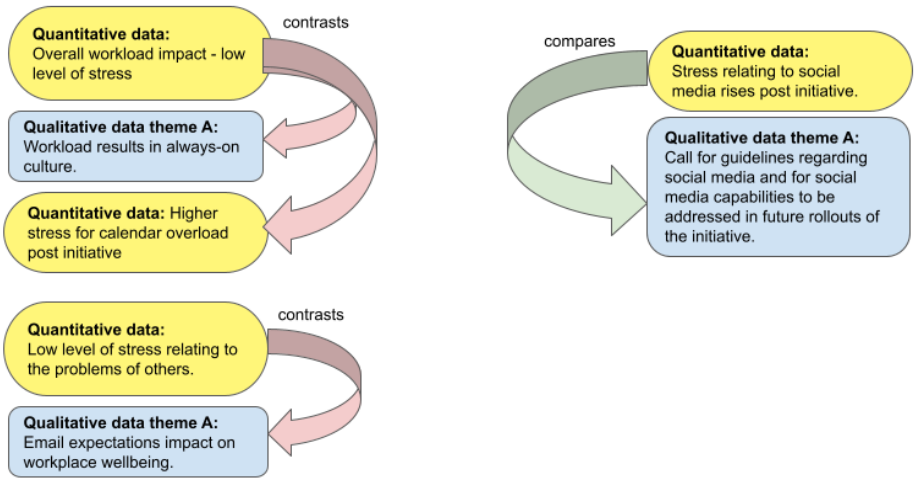


The qualitative and quantitative data relating to the challenges presented by digital technologies is largely aligned (figure 5.14). In the quantitative data, a high number of survey respondents report stress relating to: work-home boundaries; digital overload and digital distraction. This finding reflects the qualitative data which demonstrates the significant impact of these challenges on participant's workplace wellbeing, and the complications of cultural norms and practices.

Across the board, the quantitative data demonstrated a limited impact of the digital wellbeing intervention in addressing stress relating to the challenges of digital technologies. In fact, for work-home conflicts the numbers experiencing stress increased for some of the five indicators post-intervention. This quantitative finding is incongruent with qualitative data demonstrating that the digital wellbeing intervention enhanced participants' capability to manage: work-home boundaries; digital overload; and digital distraction. Organisational cultural norms and practices relating to digital technologies are framed as contributing to the challenges presented by digital technologies. For example, always-on culture is described as widespread, covert and ingrained within organisational culture and structures, and therefore presents a significant challenge for applying work-home boundary management skills in practice.

There are some discrepancies between the quantitative and qualitative data relating to digital overload and digital distraction (figure 5.15) warranting discussion.

Figure 5.15 Data integration RQ1(b)



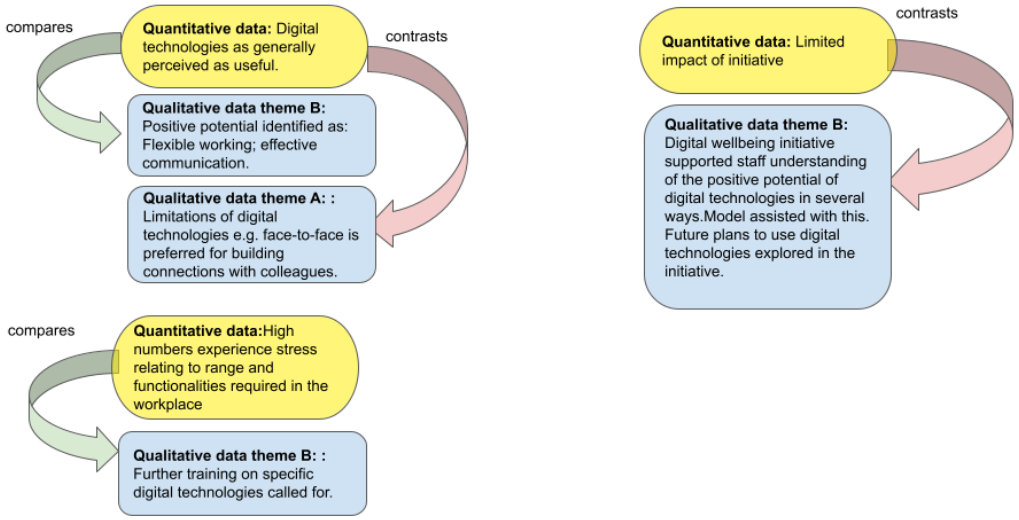
In relation to digital distractions, low numbers report stress relating to one of the DSS statements in the quantitative data 'Due to digital technologies I have too much to do with the problems of others'. This is contradicted by qualitative findings demonstrating that an expectation of a rapid response to email impacts workplace wellbeing. There is a swing from low to high numbers reporting stress relating to social media post-intervention in the quantitative data. This quantitative finding is reflected in other qualitative analysis outlining the need for clear policy on social media and the need for further training relating to social media. Low numbers of respondents report stress in relation to the impact of digital technologies on overall workload both pre and post-intervention. This is in contrast with qualitative data which suggests that managing workload within normal working hours is challenging and often results in an always-on culture. It is also in contrast with quantitative data indicating that participants' experienced increased stress relating to calendar overload post-intervention.

5.3.3 RQ#2 Can/how can a digital wellbeing intervention support staff to understand the positive potential of digital technologies in the specific context of higher education?

There are three main quantitative findings relevant to research question #2 "Can/how can a digital wellbeing intervention support staff to understand the positive potential of digital

technologies in the specific context of higher education?": digital technologies are generally perceived as useful; a high number of respondents experience stress relating to the range and of technologies and functionalities required in the workplace; the digital wellbeing intervention had a slight impact on the perceived usefulness of digital technologies. There was a slight decrease in the percentage of respondents agreeing that digital technologies are useful overall, and there was a slight increase in the percentage of respondents reporting stress to the range of tools and functionalities required in the workplace. The relevant qualitative findings can be summarised as follows: specific benefits of digital technologies identified as flexible working and effective communication; limitations of digital technologies; suggestions for further training on technologies already in use; future plans to use digital technologies; digital wellbeing emphasised the positive potential of digital technologies (figure 5.16).

Figure 5.16 Data integration RQ2



The quantitative finding that digital technologies are generally perceived as useful by staff is mirrored by qualitative data outlining the specific potential of digital technologies including: flexible working; and effective communication. These findings are tempered by qualitative findings outlining the limitations of these benefits. For example it is clear that participants prefer communicating and connecting with colleagues in the face-to-face context.

The high numbers of participants reporting stress relating to the number and complexity of digital technologies in the quantitative data is reflected in qualitative data calling for more

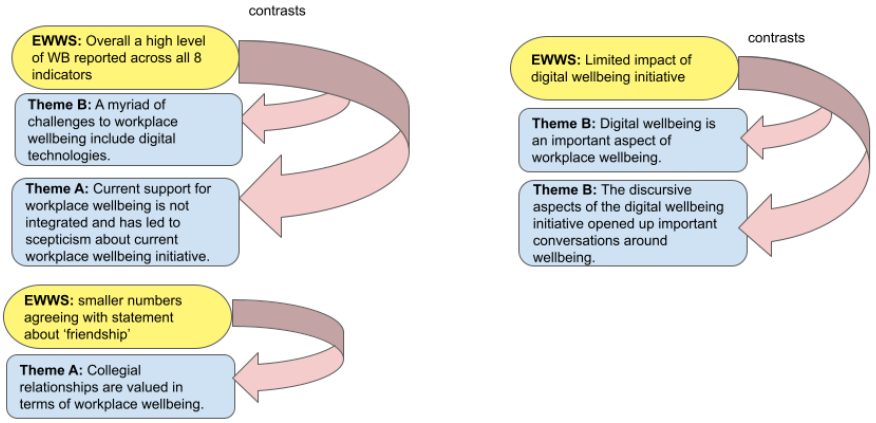
training in relation to the digital technologies already in use in the workplace. These findings are further elaborated by quantitative data outlining the extensive number of technologies used by participants.

The quantitative findings indicate a limited impact of the digital wellbeing intervention on the perceived usefulness of digital technologies. This is in contrast with the qualitative data demonstrating that the intervention enhanced participants' understanding of the positive potential of digital technologies. The model of digital wellbeing used in the intervention was mentioned as particularly useful in highlighting the positive potential of digital technologies.

5.3.4 RQ#3: Can/how can a digital wellbeing intervention impact workplace wellbeing in the specific context of higher education?"

The quantitative findings relating to research question #3 "Can/how can a digital wellbeing intervention impact workplace wellbeing in the specific context of higher education?", can be summarised as follows: a high level of wellbeing was reported prior to and post-intervention; the impact of the digital wellbeing intervention was limited; fewer numbers agree with the statement regarding friendship at work. The qualitative findings relating to research question #3 can be summarised as follows: there are a myriad of challenges to workplace wellbeing include digital technologies; the lack of integration of workplace wellbeing has led to scepticism about current workplace wellbeing interventions; collegial relationships are valued in terms of workplace wellbeing; the discursive aspects of the digital wellbeing intervention opened up important questions about digital wellbeing.

Figure 5.17 Data integration RQ3



In the quantitative data participants reported a high level of agreement with all eight EWWS statements both prior to, and after participating in the digital wellbeing intervention. The high level of reported workplace wellbeing is in contrast with qualitative findings suggesting that there are many challenges to workplace wellbeing including digital technologies. Qualitative findings suggest the lack of integration of workplace wellbeing supports has resulted in cynicism in relation to current workplace wellbeing interventions, which is also in contrast to the high level of workplace wellbeing.

The EWWS statement that participants were least in agreement on was statement 3, 'I consider the people I work with to be my friends'. This data is in stark contrast to qualitative findings that emphasise the value of collegial relationships in terms of workplace wellbeing.

There was a slight change in the level of agreement with the statements post-intervention both positively and negatively, making the findings somewhat inconclusive in terms of the impact of the intervention on workplace wellbeing. This finding is in contrast to qualitative data that demonstrates that the intervention impacted participants' workplace wellbeing.

Chapter 6 Discussion of findings, conclusions & recommendations

6.1 Introduction

This final chapter begins by discussing the findings presented in chapter five in respect of the three research questions guiding this study, and draws together the overall conclusions from the findings. Based on these conclusions, the contribution of this study is outlined. Next, recommendations are offered for: future research; the design and delivery of digital wellbeing interventions; and integrating support for digital wellbeing and workplace wellbeing in higher education. The limitations of the study are outlined and the chapter closes with a final reflection by the researcher.

6.2 Discussion

In this section, the qualitative and quantitative findings are discussed to draw conclusions in respect of each of the three research questions.

1. Can/how can a digital wellbeing intervention support staff to manage the challenges presented by digital technologies in the specific context of higher education?
2. Can/how can a digital wellbeing intervention support staff to understand the positive potential of digital technologies in the specific context of higher education?
3. Can/how can a digital wellbeing intervention impact workplace wellbeing in the specific context of higher education?

The discussions relating to each research question begin by addressing the findings relating to digital wellbeing and/or workplace wellbeing in a broad sense, then focus on the impact of the digital wellbeing intervention.

6.2.1 RQ#1: Can/how can a digital wellbeing intervention support staff to manage the challenges presented by digital technologies in the specific context of higher education?

This section draws on the qualitative and quantitative findings to elucidate a response to research question #1 - Can/how can a digital wellbeing intervention support staff to manage the challenges presented by digital technologies in the specific context of higher education? The research findings demonstrate that the challenges presented by digital technologies to workplace wellbeing in the higher education context largely reflect the existing literature on digital wellbeing in the workplace which highlights three key challenges: work-home boundaries; digital overload; and digital distraction. The findings relating to these challenges are discussed under separate headings. To contextualise the impact of the digital wellbeing intervention, each section opens with a discussion of the specific challenges of digital technologies in higher education as evident in the findings, followed by a deliberation on the digital wellbeing intervention's impact on participants' competence to manage the challenges of digital technologies.

6.2.1 Work-home boundaries

The findings demonstrate that work-home boundary management is challenged by digital technologies, leading to an always-on culture and causing stress for a high percentage of study participants. Furthermore, the findings demonstrate the significant impact of compromised work-home boundaries and offer insights into the complex and multifaceted causes of blurred work-home boundaries specific to the higher education workplace context. The findings offer promising evidence that the digital wellbeing intervention impacted participants' competence to manage work-home boundaries.

The study established that work-home boundary management is compromised by digital technologies, leading to stress for between fifty-four and seventy-three percent of study participants across the various indicators. These findings echo prior work identifying digital technologies as the key facilitator of blurred work-home boundaries leading to an always-on culture (Bordi *et al.*, 2018; Cecchinato, 2018; Rich, Aly, Cecchinato *et al.,* 2020). The extent of this issue in the findings highlights the need to address the challenges to work-home boundaries presented by digital technologies. Additionally, the findings indicate that remote working led to increased blurring of work-home boundaries as staff

adjusted to the new level of dependency on digital technologies in the initial enforced remote working period during the Covid-19 pandemic. Participants new to remote working felt compelled to increase their use of digital technologies in order to demonstrate visibility to line managers while working from home. These findings reflect research emerging from the pandemic experience such as McCarthy e*t al.'s* (2020) national survey on remote working in the Irish context, which confirms that thirty-seven percent of respondents (n= 7,241) found it difficult to switch off from work during the initial enforced working period[21] resulting from the Covid-19 pandemic. While there is evidence in this study to demonstrate that the pandemic and increased reliance of digital technology exacerbated the impact of digital technologies on work-home boundary management, it is clear from the literature that always-on culture has been impacted by digital technologies for many years prior to the pandemic (Cecchinato, Cox & Bird, 2015; Bordi *et al.*, 2018; Chartered Institute of Personnel & Development 2020).

Furthermore, the findings that demonstrate that always-on culture intrudes significantly on participants' home life, in line with Krause (2018) who suggests that digital technologies have impacted work-home boundaries to the extent that they have "annihilated space and time as the two basic and inseparable connected dimensions for each social system" (p. 224). The impact of these intrusions extends to family members, and the findings demonstrate the emotional impact of such intrusions on participants. In addition to the impact of blurred work-home boundaries on individuals, the findings offer evidence that higher education staff are concerned about the impact of always-on culture on student wellbeing. Modelling always-on culture and blurred work-home boundaries is described as potentially perpetuating such norms and practices for future employees (current students), within and beyond the higher education sector. This potential ripple effect increases the impetus to address work-home boundaries within the higher education sector, particularly since student wellbeing and digital wellbeing is high on the agenda for higher education stakeholders (USI, 2019; HEA, 2020). These findings also reflect digital wellbeing policy and guidelines developed in the UK that suggest higher education institutions have a dual responsibility for digital wellbeing of both staff and students (JISC, 2019).

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[21] Data collected 27th April to May 5th 2020

Some of the factors contributing to always-on culture reflect prior work including: a sense of responsibility to students (Wilk, 2016); and the perceived necessity to engage with always-on culture to succeed in the workplace (Mark, Gudith & Klocke, 2008; Tarafdar, Gupta & Turel, 2015). The findings of this study add to this body of work by identifying another potential factor complicating work-home boundary management - part-time study. This factor is an important consideration given that current national policy focuses on expanding part-time study opportunities for employees across all sectors and the number of students studying part-time continues to increase steadily (HEA, 2022). Furthermore, the majority of higher education institutions in the Irish context encourage staff to engage with part-time study by offering study leave and support for fees.

The qualitative findings offer promising evidence of the impact of the intervention on participants' competence relating to work-home boundary management. The key impact of the digital wellbeing intervention evident in the findings is the change in participants' attitudes. The presentations and the discursive learning activities included in the intervention emphasised the necessity of creating clear work-home boundaries to protect workplace wellbeing and work-life balance. Specifically, the discussion activities highlighted the discrepancies between the culture of particular units in relation to work-home boundary management and caused participants to reflect on their own practices. The findings provide evidence that participants have reassessed feelings of discomfort and guilt in relation to drawing clear work-home boundaries in the eight-twelve weeks post-participation.

In contrast, the quantitative data demonstrate a limited impact of the intervention, and the percentage of participants reporting stress relating to the impact of digital technologies on work-home boundaries remains high post-intervention. A potential explanation for the limited impact of the intervention on participants' competence to manage work-home boundaries is that the intervention was delivered within the cultural norms and structures which were identified in the qualitative findings as exacerbating the impact of digital technologies on work-home boundary management. Changing these cultural norms was beyond the scope of this study and an intervention approach to managing digital wellbeing and specifically work-home boundary management. Therefore the management of work-home boundaries due to digital technologies continues to create stress for participants. Potentially, the timing of the study and survey administration is also a factor

contributing to the limited impact of the intervention as the post-intervention quantitative data was gathered in March/April 2022 when the pandemic continued to impact on staff working arrangements with many staff continuing to move between remote and on-campus working. Moving between two work environments may have prevented participants from applying strategies to manage work-home boundaries as efficiently as would be the case in a stable work environment.

In summary, the extent and impact of blurred work-home boundaries and always-on culture on workplace wellbeing evident in the findings makes a strong case for addressing always-on culture, and supporting the management of work-home boundaries for staff in higher education. The potential impact on student wellbeing adds to this impetus. The findings offer promising evidence that a digital wellbeing intervention can support staff to manage the challenges presented by digital technologies to workplace wellbeing. Specifically, the peer discussion activities have changed participants' perceptions of work-home boundary management from a selfish pursuit to a necessity to manage workplace wellbeing and work-life balance. However, further quantitative work is required to establish if the intervention can have a statistically significant impact on the management of work-home boundaries. The findings suggest that to maximise the impact of interventions to deal with the challenges of work-home boundaries due to digital technologies, interventions should be complemented by measures to address the organisational structures and norms that contribute to always-on culture/blurred work-home boundaries.

6.2.2 Digital overload

The findings demonstrate that digital overload generated by digital communication tools such as Zoom and email cause stress and have an impact on workplace wellbeing, while the impact of digital technologies more broadly have less impact. The lack of policy relating to these digital communication tools in respect of workplace wellbeing is perceived as contributing to this stress and impact on workplace wellbeing. The findings offer promising evidence that the digital wellbeing intervention impacted participants' competence in managing digital overload relating to these tools.

The findings illustrate that digital communication tools create digital overload for participants through an overload of information, and by enabling additional work tasks to be easily communicated. This digital overload specifically generated by digital communication causes stress for a majority (fifty-three to sixty percent) of study participants. In contrast, the numbers reporting stress due to the impact of digital technologies more generally are significantly lower (thirty-three to forty percent). The findings identify specific communication tools causing this digital overload - email and Zoom and indicate that the lack of guidelines relating to these technologies exacerbates digital overload and places pressure on staff to manage these expectations individually. Email has been used in higher education for several decades and yet the findings of this study, and other recent work (Cecchinato, Cox & Bird, 2015; Bordi *et al.,* 2018) suggest that digital overload generated by email continues to impact workplace wellbeing. The findings of this study suggest that the lack of guidelines in relation to email response time contributes to this negative impact on workplace wellbeing.

While Zoom is a relatively new tool in higher education, a similar pattern appears to be emerging. The impact of digital overload relating to Zoom has become apparent with the term "Zoom fatigue" emerging in the literature and discourse, particularly since the intense reliance on Zoom during the Covid-19 pandemic (Nesher Shosan & Whert, 2022). Given the expected continuation of remote and hybrid working arrangements identified in the literature (Chartered Institute of Personnel & Development, 2020; McCarthy *et al.,* 2020) and the introduction of legislation to protect the right to remote working in the Irish context, it is likely that Zoom (and similiar alternative technologies) will continue to feature prominently in the higher education workplace for some time.

The findings of this study offer insight into one potential means of addressing, or at least ameliorating, digital overload relating to Zoom and email. Participants perceive that a lack of guidelines exacerbates the impact of these tools on workplace wellbeing and therefore the development of guidelines can support the management of Zoom and email overload. The significant impact of digital overload relating to Zoom and email evidenced in this study and elsewhere provides an impetus for developing such guidelines.

The findings also offer promising evidence that a digital wellbeing intervention can impact participants' competence to manage digital overload relating to communication tools such

as Zoom and email. The peer discussion activities were highly valued by participants in this respect, offering opportunities to share experiences and insights into how other individuals and units/schools across the university manage digital overload. The evidence that conversations around digital wellbeing (and wellbeing) are valued echoes prior work specifically addressing digital wellbeing (Rich *et al.,* 2020) and research on workplace wellbeing interventions more generally (Ivandic *et al*., 2017). The findings also indicate that the digital wellbeing intervention served to re-engage participants with the importance of disconnecting from devices and applications. Digital detox and disconnection strategies were discussed in the intervention and served to emphasise the importance of disconnecting from devices and applications. While the findings demonstrate that the intervention raised awareness around digital overload and the potential for disconnection strategies to address this overload, the literature suggests that awareness around digital overload is not sufficient to ensure behaviour changes (Hanin, 2021; Beidermann *et al.,* 2021). Digital disconnection strategies have also been described as limited by the inherent design of technology to encourage digital overload (Dennis, 2021). In addition, the discourse surrounding digital disconnection suggests that such a strategy may not always be practical, or desirable, particularly within the workplace (Hesselberth, 2018). Disconnecting from devices and applications completely could also restrict the flexible working arrangements facilitated by digital technologies which is identified as a benefit of digital technologies, as discussed in relation to research question two.

In summary, the extent and significant impact of digital overload evident in the findings, particularly in relation to Zoom and email, support the case for addressing digital overload relating to these technologies (Mark, 2008; Tarafdar, Gupta & Turel, 2015).The findings of this study offer insight into a potential means of addressing, or mitigating, the impact of digital overload - through the provision of guidelines relating to digital technologies and workplace wellbeing. The findings provide insight into the value of conversations and sharing experiences for staff in higher education in relation to their digital overload experiences, which can guide the design of future interventions. The findings also offer evidence that the intervention served to re-engage participants with the value of disconnecting from devices and applications. However, in line with prior research and cognisant of criticisms of digital detox strategies, future interventions could emphasise the limitations of this strategy to manage digital overload in the workplace. In addition, further

quantitative work is required to establish whether the digital wellbeing intervention has a statistically significant impact on stress relating to digital overload.

6.2.3 Digital distractions

The findings demonstrate that digital distractions cause stress for a high percentage of study participants, but that the impact depends on the type of distraction. The impact of digital distractions on workplace wellbeing is exacerbated by a lack of policy in relation to technologies such as email, Zoom and social media. Furthermore, the findings demonstrate that the management of digital distractions is complicated by internal and external factors. The findings suggest that the digital wellbeing intervention impacted on participants' competence to manage digital distractions by sparking discussion around the impact of digital distractions and by facilitating the development of specific strategies to manage digital distractions.

The findings establish that the impact of digital distractions depends on the nature of the digital distraction. Digital distractions relating to organisational and cultural norms (email response expectations, constant availability) in particular cause stress for a majority (eighty percent) of study participants. The findings demonstrate that digital distractions due to social interactions caused stress for a number of participants prior to participating in the intervention (fifty-four percent). In contrast, the findings show lower numbers reporting stress relating to interactions with others on social media (fourteen percent) and relating to engaging with colleagues' problems (thirty-three percent) are lower pre-intervention. There is a marked change for the numbers reporting stress relating to social media post-intervention.

The findings also offer evidence of the impact a lack of policy relating to digital technologies has on the impact of digital distractions by encouraging frequent checking of emails. The cultural norm of responding quickly to emails is also identified as challenging the application of strategies to manage digital distractions. This is concerning in light of prior work that establishes the impact of digital distractions in the workplace articulated as "the cost of interrupted work" (Mark, Gudith, & Klocke, 2008).

There is also evidence that individual traits or propensity towards distraction contributes to participants' engagement with digital distractions in line with prior work (Lindström,

2020). However, there is little discussion in the findings relating to how the design of technology impacts on digital distractions. This is interesting in light of the focus in the digital wellbeing intervention which included discussion and presentation of data in relation to the impact of technology design on digital distraction. It is also in contrast to research that emphasises the impact of technology design on distraction (Schull, 2005; Calvo, Peters & Ryan, 2018; Centre for Humane Technology, 2020). Calvo, Peters & Ryan (2018) in developing a framework for technology design that supports wellbeing suggests that technology design is a key factor in respect of digital distraction. Schull's (2005) research demonstrates the power of technology design in terms of distraction, not in the specific context of the workplace but in relation to gambling and addiction.

The findings demonstrate very little impact of the intervention for three of the five statements relating to digital distractions. However, the numbers reporting stress relating to social media as a distraction significantly increase post-intervention. This finding was further investigated in the focus group interviews but little clarity or elaboration was forthcoming from participants. This finding could be interpreted as the impact of the digital wellbeing intervention on raising awareness of the potentially distracting nature of social media for participants and indicates that participants may not have previously considered social media as a distraction. Such an analysis connects to recent work highlighting the increased use of social media in the workplace (Chartered Institute of Personnel & Development UK, 2020). The impetus to support staff in terms of social media is emphasised by emerging work relating to the impact of social media use in the workplace (Nguyen, 2021).

The numbers experiencing stress relating to their competence to disengage from social interaction due to digital technologies halved post-intervention from fifty-three percent to twenty-eight percent. This finding offers promising evidence that a digital wellbeing intervention can empower participants to disengage from social interaction through digital technologies. This finding is interesting in the context of other data within this study which explores the challenges that participants experienced in returning to the office post Covid-19 pandemic. Participants found the social aspect of work somewhat distracting during this transition phase and expressed a need to 'recalibrate' to the social aspect of work.

Finally, the findings demonstrate that the digital wellbeing intervention supported participants' competence to manage digital distractions through the development of particular strategies to manage digital distractions. There is also evidence that participants have found these strategies useful in practice. In providing evidence of the application of strategies to manage digital distractions this study offers a contribution to the limited work to date on the effective application of digital distraction strategies in practice (Biedermann, Schneider & Drachsler, 2021). The findings also offer evidence of participants' determination to continue applying these strategies in practice, despite facing challenges in doing so. This highlights the opportunity to continue supporting staff in this endeavour by providing future support for digital wellbeing.

In summary, the findings demonstrate that digital distractions cause stress for a high percentage of study participants and that a digital wellbeing intervention provides an opportunity to support staff in managing digital distractions. The impact of digital distractions on workplace wellbeing is exacerbated by a lack of policy in relation to technologies such as email and social media, therefore highlighting the need to address the challenge of digital distractions. These findings build on prior work demonstrating the impact of a digital wellbeing intervention to manage digital distractions in the education context (Gui *et al.,* 2018), by exploring the potential of an intervention to impact on staff in higher education, and by providing evidence of the application of skills in practice.

6.2.4 Conclusion

The findings address research question #1 in two ways: by examining the specific challenges of digital technologies to workplace wellbeing in higher education and the impact of organisational cultural norms and practices on these challenges; and by offering evidence of the impact of the digital wellbeing intervention in managing these challenges. Broadly, the categories of challenges identified by study participants align with the existing literature on the challenges of digital technologies to workplace wellbeing: work-home boundaries; digital overload; and digital distraction.

The findings offer promising data in relation to the potential of a digital wellbeing intervention to support staff in managing the challenges of digital technologies to workplace wellbeing in higher education. Evidence of changes in behaviour and perceptions in addition to knowledge acquisition emerges from the findings, addressing Themelis & Sime's (2019) call for "impact studies of digital wellbeing interventions and assessment of the emotional and behavioural changes in participants rather than just gains in knowledge and understanding" (p. 32). The peer learning aspect of the intervention, facilitated through discursive learning activities, is highlighted in the data as a particularly useful aspect of the intervention. These findings are tempered by the limited impact of the intervention evident in the quantitative data. Further work is therefore required to establish whether the intervention can have a statistically significant impact on the stress created by digital technologies.

Echoing studies that demonstrate individual digital wellbeing knowledge and skills are just one factor influencing digital wellbeing (JISC, 2019a; Themelis and Sime, 2019; Biggins & Holley, 2020), this study offers significant evidence of how organisational structures and cultural norms accentuate the challenges presented to workplace wellbeing by digital technologies. The findings also suggest that any impact of digital wellbeing interventions is likely to be constrained by these factors. In light of these findings, future support for managing the challenges presented by digital technologies to workplace wellbeing would have increased impact if a combination of interventions focusing on individual competence were combined organisation-wide support such as the development of policy relating to digital technologies and clarity in relation to always-on culture. In addition, further integration of workplace wellbeing support could be facilitated by introducing conversations around workplace wellbeing and digital wellbeing into team meetings and other regular workplace practices. The suggestion to create dedicated time for staff to engage with digital wellbeing interventions may be more challenging to address given the implications for resources and workload structures. However, as time is perceived as a key barrier to participating in such interventions both in this study and elsewhere (Rich, Aly, Cecchinato *et al.,* 2020), the impact of such interventions could be improved by addressing this issue.

An unintended impact of the digital wellbeing intervention evident in the findings is that individuals continue to feel individually responsible for managing the challenges of digital

technologies to workplace wellbeing. Furthermore, the study does not offer insight into the perceptions of participants on the impact of technology design on digital wellbeing in the workplace, which is highlighted in the literature as a significant contributing factor to managing the challenges of digital technologies (Schull, 2005; Calvo & Peters, 2018; Mark, Gudith & Klocke, 2008). Prior work offers a potential explanation for this omission. Bordi *et al.,* (2018) suggest that technology and respective infrastructures are not as impactful on workplace wellbeing as organisational culture and norms. While the intervention included specific activities highlighting the shared responsibility for digital wellbeing between technology designers, organisations and individuals, future rollouts can reinforce that shared responsibility. The model of digital wellbeing in the workplace can be redrawn based on these findings and the intervention design can be adjusted to focus more on this shared responsibility and the digital wellbeing intervention can be restructured to include more activities specifically relating to this.

6.2.2 RQ#2: Can/how can a digital wellbeing intervention support staff to understand the positive potential of digital technologies in the specific context of higher education?

This section draws on the research findings to address research question #2: "Can/how can a digital wellbeing intervention support staff to understand the positive potential of digital technologies in the specific context of higher education". The discussion begins by focusing on the findings relating to participants' perceptions of the usefulness, and limitations, of digital technologies within higher education, and the stress relating to the range of digital technologies used in the higher education workplace. This initial deliberation provides context for the subsequent discussion on the impact of the digital wellbeing intervention on participants' understanding of the positive potential of digital technologies.

6.2.2.1 Perceived usefulness of digital technologies

The findings suggest that digital technologies are generally perceived as useful in the higher education workplace. Two key benefits are highlighted: flexible working and effective communication. The findings acknowledge that flexible working through digital technologies can potentially result in blurred work-home boundaries and that digital

technologies have limitations for effective communication in specific contexts. Furthermore, the findings demonstrate that a high percentage of study participants experience stress relating to the range of technologies required in the workplace.

6.2.2.1.1 Flexible working

Digital technologies are described in the findings as the key facilitator of flexible working. In turn, flexible working is perceived as enabling autonomy in line with prior work demonstrating that digital technologies facilitate greater autonomy over work duties (Diaz *et al.,* 2012; Potter *et al.,* 2021). Autonomy is described in the findings as supporting positive workplace wellbeing, reflecting research that demonstrates autonomy as a key factor influencing positive workplace wellbeing (Bordi *et al.*, 2018; Bakker & Demerouti, 2017). On the other hand, the flexibility afforded by digital technologies is described as potentially by facilitating 'always-on' culture and compromising work-home boundaries. This dual aspect of digital technologies is also highlighted in prior work (Bordi *et al*., 2018; Diaz *et al*., 2012; Potter *et al*., 2021).

The findings illustrate that the remote working context stemming from the Covid-19 pandemic, prompted participants to reflect on the disparity across different roles in the university in terms of flexible working arrangements. There is evidence that traditional concerns about the impact of remote working on productivity did not materialise, echoing other recent work on remote working during the pandemic period (JISC, 2022; McCarthy *et al.,* 2020; 2022). In fact, the most recent report at the time of writing on remote working in the Irish context (McCarthy *et al.,* 2022) suggests that a majority (94% of n=8,428) of employees surveyed across a range of work contexts either work longer hours on the same hours when remote working. This finding is supported by work relating to employers' perceptions of the impact of remote working on productivity (IGEES, 2022). Such findings offer reassurance for organisations currently developing remote and hybrid working policies and challenge the trend in organisations to create a divide between certain classes of workers in terms of remote working. Considering these findings in the context of the statistics relating to remote working prior to and post Covid provides an interesting point of discussion. Prior to Covid-19 the trend in the UK and Europe was that managers were more likely to have experienced remote working. The statistics from the Irish context tell a similar story. Following Covid-19, the figures demonstrated a marked increase in remote

working for those in administrative and secretarial occupations suggesting that "many more staff doing 'Administrative and Secretarial Occupations' work are capable of working from home that have historically been permitted to do so" (Gould, Runicka, Cook & Cecchinato, 2023; p. 3). The findings of this study, and prior work, therefore suggest that concerns around productivity and remote working are an organisational culture issue rather than a practical matter.

From a legislative point of view, it is likely that remote working and hybrid working policies will soon be widely adopted in light of forthcoming integration of the Right to Request Remote Work for all workers into the Work Life Balance and Miscellaneous Provisions Bill in the Irish context (Department of Enterprise Trade & Employment, 2022). In addition to legislation pushing this agenda, research to date indicates that remote working policies influence recruitment and retention across a range of workplace contexts (McCarthy *et al.,* 2022). The findings of this study, combined with work elsewhere (Potter, *et al.,* 2021) suggest that the remote working experience of the pandemic has paved the way for facilitating flexible working through digital technologies for those in non-teaching roles.

The findings also raise concerns about the impact of transitioning between remote working and on-campus working in higher education. Notwithstanding the significant benefit of remote working during the pandemic, participants found the initial move to remote working somewhat challenging. The concerns raised in this study reflect other work emerging in the initial post-pandemic literature that demonstrates the significant energy required in the sudden move to remote learning, both in terms of upskilling and adapting to modified work routines (Molino *et al.,* 2020). Moreover, the findings also indicate that the return to on-campus working has in turn presented challenges, highlighting a need for support in transitioning between work modalities and not just from on-campus to remote working.

In the context of emerging literature discussing the uneven burden on females in the workforce in terms of navigating remote working (Minello, Martucci & Manzo, 2021; Molino *et al.,* 2020), it is interesting to note that participants of this study identifying as both male and female commented on the emotional impact of blurred work home boundaries. While the number of male participants was low (two of seventeen participants)

focus groups did not delve deeply into the differences in terms of managing work-home boundaries between males and females, the findings touch on an alternative position and would be worth exploring in future work.

In summary, digital technologies support flexible working and autonomy for higher education staff, but this flexibility can also create unwanted practices such as blurred work-home boundaries in line with prior work (Diaz *et al.,* 2017; Bordi *et al.,* 2018; Potter *et al.,* 2021; Chartered Institute of Personnel & Development, 2020). The findings make specific reference to the pandemic period and demonstrate that traditional held concerns relating to productivity were unfounded, reflecting other recently emerging work (JISC, 2022; McCarthy *et al.,* 2022). By offering insights into the remote working experience of the pandemic period, the findings of this study offer guidance in respect of extending flexible working for those in non-teaching roles in higher education.

6.2.2.1.2 Effective communication

The findings relating to digital technologies and effective communication focus largely on the experience of the Covid-19 pandemic period. The pandemic highlighted the benefits of digital technologies for communication, in the absence of any other medium. However the increased reliance on digital technologies also emphasised the limitations of digital technologies in respect of communication.

In line with research emerging post-pandemic on the value of digital technologies during the pandemic period (JISC, 2022; McCarthy *et al.,* 2022), the findings of this study demonstrate that the Covid-19 pandemic and resulting remote working experience highlighted the positive potential of digital communication tools in higher education. The findings focus specifically on the benefits of Zoom to replace communication that would normally happen in the face-to-face context such as building rapport with new colleagues and informal queries amongst staff. However, the increased reliance on digital technologies highlighted the limitations of communicating with digital technologies in specific contexts such as communicating with students, and when engaging with unfamiliar colleagues.

While the findings confirm the benefits of digital technologies for effective communication, a preference for face-to-face connection with both colleagues and students is also strongly evident. Specific aspects of face-to-face interactions were highlighted as

positive compared to digital communication such as: the ease of inviting a colleague for a social coffee; and the ability to interpret the student cohort's mood through overheard snippets of conversation on campus. These findings reflect existing research demonstrating that digital communication is most effective when used in conjunction with face-to-face communication for building and maintaining relationships (Baym, 2015), and recent work examining the specific aspects of face-to-face interactions that are valued in the context of increased use of digital communication technologies such as spontaneity of communication (Gruber, Hargittai & Nguyen, 2022).

In summary, while this study demonstrates that digital communication during the pandemic offered a means of effective communication in higher education across most contexts, face-to-face communication remains firmly the preferred mode of connecting with colleagues and students. These findings are in line with existing work demonstrating the limitations of digital communications (McCarthy et al, 2020; JISC, 2022). Specific factors were highlighted as preferable in the face-to-face context such as the ease of social interactions, in line with recent work highlighting the value placed on aspects of face-to-face communication (Gruber, Hargittai & Nguyen, 2022).

6.2.2.2 Stress relating to the range of technologies in the workplace

Previous studies have highlighted that the range and complexity of digital technologies required in the workplace can create stress for employees (Tarafdar & Ragu-Nathan, 2011; Tarafdar, Gupta & Turel, 2015). The findings of this study reflect this work by providing evidence that a number of participants find the range of technologies and functionalities required in the higher education workplace excessive. The number of digital tools in use by study participants offers a potential explanation for this finding. Participants report using between twenty-two and forty-five different digital tools to manage their work, reflecting prior work that demonstrates the extensive range of digital tools currently in use in higher education (National Forum for Teaching & Learning, 2020). While the National Forum for Teaching and Learning (2020) report highlights the range of digital technologies used by staff who teach in higher education, the findings of this study illuminates the impact for those in a range of roles in higher education. The findings also demonstrate a need for more targeted training in relation to digital technologies and in particular the need for beginner level workshops. Future training interventions relating to digital technologies

could draw on work by Biggins, Holley & Zezulkova (2017), who propose a human-centred approach to digital competence development where lifelong learning, self development and wellbeing play a central role. This proposed approach involves a self assessment of confidence/competence in relation to digital technologies to allow for personalised support in building confidence and competence. While this approach is currently used to support teaching staff in higher education, it could also be adopted for staff in non-teaching roles.

6.2.2.3 The impact of the digital wellbeing intervention on the understanding the positive potential of digital technologies

We know from previous studies in other contexts that digital wellbeing interventions can support participants to develop skills to manage the challenges presented by digital technologies to wellbeing (Gui *et al.*, 2018; Rich *et al.*, 2020). The findings of this study demonstrate that a digital wellbeing intervention can also support participants' understanding of the positive potential of digital technologies by challenging participant's perceptions of digital technologies, and by re-focusing participants' attention on the positive potential of digital technologies.

The quantitative findings suggest a limited positive impact of the digital wellbeing intervention on perceived usefulness of digital technologies and in fact, the post-intervention data shows a level of negativity towards digital technologies not present in the pre-intervention data. Potentially, this negativity emerged due to the opportunities to reflect on those tools currently used in the workplace during the digital wellbeing intervention, and the opportunity to explore alternative tools. Furthermore, the quantitative data demonstrates little impact on the perceived excessive nature of the range of tools and range of functionalities required in the workplace.

The qualitative findings offer more promising evidence in relation to the impact of the digital wellbeing intervention on participants' perceptions of the usefulness of digital technologies. It appears that participants were highly attuned to the challenges presented by digital technologies to workplace wellbeing in advance of participating in the intervention. This awareness may relate to the timing of data collection during the Covid-19 pandemic as prior work demonstrates that the increased reliance on digital technologies during the pandemic exacerbated the challenges of digital wellbeing

(Chartered Institute of Personnel & Development UK, 2020; McCarthy *et al*., 2020; JISC, 2022). The findings of this study provide evidence that the model of digital wellbeing in the workplace used in the digital wellbeing intervention challenged participants' perceptions of digital technologies and refocused their attention on the positive aspect of digital technologies. This model draws on extensive theoretical work on models of wellbeing (Dodge *et al.*, 2012; Cummins, 2016); workplace wellbeing, (Demerouti *et al.,* 2001; Deci, Olafsen and Ryan, 2017), and digital wellbeing (JISC, 2019a; Vanden Abeele, 2021). The findings of this study offer evidence of the impact of a model of digital wellbeing in the workplace in terms of understanding digital wellbeing in a workplace digital wellbeing intervention.

In addition, there is evidence in the findings that participants engaged with some of the new technologies introduced in the digital wellbeing intervention. These findings offer an initial confirmation of the value of exploring new technologies within a digital wellbeing intervention, but further work is required to examine this finding in more depth.

6.2.2.4 Conclusion

The findings address research question #2 by: providing insights into perceptions of the benefits of digital technologies in higher education; and by offering evidence that a digital wellbeing intervention can support staff in higher education to understand the positive potential of digital technologies.

While existing work identifies a range of potential benefits of digital technologies including networking opportunities; collaboration; and access to resources (Diaz *et al.,* 2017; Bordi *et al.,* 2018; Potter *et al*., 2021) the findings of this study concentrate on two specific benefits: flexible working and effective communication. Flexible working facilitated by digital technologies is perceived as potentially supporting autonomy in the workplace, which in turn impacts positively on workplace wellbeing. In line with research on digital communication technologies specifically (ibid.) this study offers evidence that the benefits of digital technologies co-exist with the potential challenges of these technologies to workplace wellbeing.

The findings build on prior work that makes a case for increased flexibility for staff in non-teaching roles in higher education by offering evidence that traditional concerns

relating to remote working and decreased productivity did not materialise during the pandemic. Participants of this study report equivalent or increased productivity during the remote working experience, reflecting work elsewhere across a range of sectors including higher education (McCarthy *et al.,* 2020; 2022; JISC, 2022).

While the quantitative findings suggest a limited impact of the intervention on participants' perceptions of the usefulness of digital technologies, the qualitative findings offer promising data in relation to the impact of the intervention in terms of participants' understanding of the positive potential of digital technologies. Specifically, the findings demonstrate that the intervention challenged participants' perceptions of digital technologies through the use of the model of digital wellbeing in the workplace by re-focusing attention on the benefits of digital technologies. There is little existing work on the impact of using models of digital wellbeing to support digital wellbeing training interventions for staff and the findings of this study offer evidence of the value of such models in the context of higher education.

6.2.3 RQ#3 Can/how can a digital wellbeing intervention impact workplace wellbeing in the specific context of higher education?

Research question #3 sought to explore: "Can/how can a digital wellbeing intervention impact workplace wellbeing in the specific context of higher education?" In this section the findings are drawn upon to respond to this question by: offering an insight into the workplace wellbeing of staff in a higher education context; and exploring the impact of the digital wellbeing intervention on the workplace wellbeing of participants.

6.2.3.1 Workplace wellbeing in higher education

The literature to date in respect of workplace wellbeing in higher education concentrates largely on staff in teaching positions (Themelis and Sime, 2019). The findings of this study add to the limited work in relation to those in non-teaching roles in higher education (Wilk, 2016; JISC, 2022) by offering insights from those working in a range of roles across a higher education institution.

The quantitative findings demonstrate that a high level of eudaimonic workplace wellbeing is enjoyed by the majority of study participants, implying that participants feel positive

about their "ability to develop and optimally function within the workplace" (Bartels, Peterson & Reina, 2019: p. 3). While this is a welcome finding, it is somewhat surprising given the qualitative data articulates significant challenges to workplace wellbeing presented by digital technologies, and the existing literature outlines a broad range of challenges to workplace wellbeing (Hirschle & Gondim, 2020). Specific to the higher education context, prior work offers evidence that higher education employees are amongst those at highest risk of workplace stress (Kenny, 2015; Wilk, 2016; Franco-Santos & Doherty, 2017; Urbina-Garcia, 2020). In the focus group interviews, participants were invited to discuss the high level of reported workplace wellbeing and to identify the factors that contribute to their workplace wellbeing. Factors articulated by participants as contributing to workplace wellbeing broadly reflect existing work and include: autonomy; effective communication with colleagues; management style; matching individual skills to specific tasks; and clarity around role (Sonnentag, 2015; Hirschle & Gondim, 2020). While the level of autonomy can be dictated by job roles and broader organisational structures, the findings relating to communication with colleagues, management style, matching individual skills to specific tasks and clarity around role, can all inform management and leadership practices at local level.

In summary, the findings provide rich insights relating to the importance of digital wellbeing in terms of the broader picture of workplace wellbeing. While a high level of eudaimonic workplace wellbeing is enjoyed by participants of this study, the findings also outline a number of challenges to workplace wellbeing presented by digital technologies. The high level of workplace wellbeing is also in contrast to the qualitative data which suggests participants are sceptical about current wellbeing interventions. These contradictions are somewhat explained by the discussions around the factors impacting positively on workplace wellbeing such as autonomy; effective communication; good relationships with colleagues; role clarity; and matching individual skills to specific work tasks.

6.2.3.2 Impact of the digital wellbeing intervention on workplace wellbeing

The findings offer insight into the potential impact of a digital wellbeing intervention on overall workplace wellbeing. The evidence for this claim relates to the links that participants make between digital wellbeing and overall workplace wellbeing. The

quantitative data indicates little impact of the digital wellbeing intervention on the eudaimonic workplace wellbeing of participants. This could be explained by the particularly high level of eudaimonic workplace wellbeing reported by participants prior to engaging with the intervention as participants already enjoyed a high level of eudaimonic workplace wellbeing.

The qualitative data offers more promising findings relating to the impact of the intervention on workplace wellbeing. Participants articulated the connections between digital wellbeing and workplace wellbeing when discussing their motivation for participating in the digital wellbeing intervention. In making these connections, participants' demonstrated that they perceive digital wellbeing to be a key aspect of workplace wellbeing. These findings reflect theoretical work to date which frames digital wellbeing as a core aspect of general wellbeing (JISC, 2019a) and research demonstrating the link between digital wellbeing and workplace wellbeing (Rich, Aly, Cecchinato *et al.,* 2020). Furthermore, the findings offer insights into how the connections between digital wellbeing, workplace wellbeing and general wellbeing are understood in the higher education workplace context. By articulating links between digital wellbeing to overall workplace wellbeing, the findings provide evidence of the potential for a digital wellbeing intervention to influence workplace wellbeing and general wellbeing.

On the other hand, the lack of integrated support for workplace wellbeing could limit the impact of future digital wellbeing initiatives. The key issue arising from this lack of integration is the limited time available to employees to participate in workplace wellbeing interventions and participants indicated that they struggle to find time to participate in workplace wellbeing interventions, including the digital wellbeing intervention. These findings are in line with existing work that indicates that time to participate poses a barrier to the impact of any workplace wellbeing interventions (Rich *et al.,* 2020; Brady & Wilson, 2021). The cynicism evident in the findings in relation to workplace wellbeing initiatives could also potentially present a barrier to participating in workplace wellbeing interventions. However, the findings offer promising evidence that this cynicism does not extend to the digital wellbeing intervention at the heart of this study.

In summary, the quantitative findings demonstrate a limited impact of the intervention on the workplace wellbeing of participants. However, the qualitative data offers evidence that

a digital wellbeing intervention can impact participants' workplace wellbeing. This evidence relates to the links participants make between digital wellbeing and workplace wellbeing. Those links provide evidence of the potential for a digital wellbeing intervention to influence workplace wellbeing and general wellbeing.

6.2.3.3 Conclusion

The findings address research question #3 in two ways: by offering insights into the eudaimonic workplace wellbeing of staff in higher education; and in providing evidence of the impact of the digital wellbeing intervention on workplace wellbeing.

The findings demonstrate a high level of workplace wellbeing is enjoyed by participants of this study. Conversely the findings demonstrate that participants encounter a range of challenges to workplace wellbeing through the use of digital technologies alone. The contradictions between the data sets are somewhat explained by the discussions around the factors impacting positively on workplace wellbeing such as autonomy; effective communication; good relationships with colleagues and matching individual skills to specific work tasks. These findings are broadly in line with other work relating to the factors influencing positive workplace wellbeing (Bordi *et al.,* 2018; Potter *et al.*, 2021), and offer insights into how these factors positively impacting workplace wellbeing can inform management and leadership practices in higher education.

The findings demonstrate the potential for a digital wellbeing intervention to impact on overall workplace wellbeing by offering evidence that participants perceive digital wellbeing to be a key aspect of overall workplace wellbeing in the context of higher education, in line with existing definitions of digital wellbeing (Burr & Floridi, 2020; JISC, 2019). In doing so, the findings present a case for future rollouts of the digital wellbeing intervention, and similar interventions in higher education.

6.3 Study Contributions

The study makes several contributions to the contemporary understanding of digital wellbeing in the workplace context.

6.3.1 Development of a model of digital wellbeing in the workplace

A model of digital wellbeing in the workplace was developed as part of this study to underpin the design and delivery of a digital wellbeing intervention for staff in a higher education context. The model adds to existing work such as Demetouri *et al*.'s (2001) Job Demands-Resource model and Orlikowski's (1992) Duality of Technology model by developing a model that also draws upon contemporary models of digital wellbeing (JISC, 2019a, Vanden Abeele (2021). Furthermore, the model of digital wellbeing in the workplace articulates the factors influencing digital wellbeing and the link between digital wellbeing and overall workplace wellbeing, which were previously implicit rather than explicit within the Job Demands-Resource model (Demetouri *et al*., 2001) and the Duality of Technology model Orlikowski (1992). While further work is required, this study offers promising evidence of the usefulness of the model as a tool for guiding the design of digital wellbeing interventions and is specifically useful in terms of re-focusing attention to the positive potential of digital technologies. Therefore the model can potentially be drawn upon to guide future research in respect of digital wellbeing in the workplace context.

6.3.2 Evidence of the impact of a digital wellbeing intervention on behaviour change

The study contributes to the limited work to date on digital wellbeing interventions in the workplace by presenting evidence that a digital wellbeing intervention can support staff to manage the challenges presented by digital technologies to workplace wellbeing. The study addresses calls for evaluations of the impact of digital wellbeing interventions beyond knowledge acquisition towards attitude and behaviour change (Themlis & Sime, 2019) by offering evidence of the impact of the digital intervention on attitudes and behaviour in the weeks following participation. Furthermore the study offers evidence that the discursive aspect of the intervention was a vital and impactful aspect of the digital wellbeing intervention in changing attitudes of participants towards the challenges of digital technologies to workplace wellbeing. The evidence of the value of the discursive aspect of the intervention echoes prior work demonstrating the importance of conversations around workplace wellbeing and digital wellbeing interventions of trainee doctors (Rich, Aly, Cecchinato *et al.,* 2020) and contributes to the literature by affirming this finding in the higher education context.

6.3.3 Analysis of the contextual factors influencing digital wellbeing

The research offers an analysis of the contextual factors influencing the challenges presented by digital technologies to workplace wellbeing in a higher education context. These findings expand on prior work relating to digital wellbeing in higher education (Biggins & Holley 2020; Beetham, 2015) by offering insights on always-on culture; the perceived lack of integrated support for workplace and digital wellbeing; and the lack of policy/guidelines in relation to digital technologies and their impact on workplace wellbeing.

6.3.4 Insights on remote working and digital wellbeing during the Covid-19 pandemic

As the research study was conducted during the Covid-19 pandemic and enforced remote working experience, the findings offer lessons for managing digital wellbeing and workplace wellbeing gleaned from this particular period. First, the findings offer insights into the specific challenges of remote working on workplace wellbeing during this very specific period including juggling work and caring responsibilities. Second, the findings suggest that the challenges of transitioning between work modes relates to the return to the office/campus as well as the initial shift from office to remote working. One of the key challenges on returning to the office was the adjustment to the social aspect of the workplace which some participants found distracting following a period of remote working. Finally, the findings concur with emerging work relating to the pandemic which demonstrate that traditional concerns relating to productivity and remote working were unfounded (Chartered Institute & Professional Development, 2020; JISC, 2022; McCarthy *et al.*, 2022) paving the way for more autonomy for those in non-teaching roles.

6.3.5 Perspectives on digital wellbeing from those in non-teaching roles in higher education

This study builds on previous work relating to digital wellbeing of those in teaching roles (Passey, 2021; Potter *et al.*, 2021) and administrator roles (Wilk, 2016) by offering these

perspectives from staff working in a range of roles across the university. The insights of those in non-teaching roles is important in terms of inclusive practice and support for staff in the context of higher education, where a significant number of staff work in non-teaching roles. This study makes three contributions in respect of the insights from those in non-teaching roles. First, the study illustrates that the challenges presented by digital technologies to workplace wellbeing are similar across all roles. The similar experience of staff in all roles in relation to digital wellbeing highlights the need for support to be offered to all staff. Second, staff in all roles raised concern in relation to modelling always-on culture to students in the higher education context. This finding suggests that non-teaching staff should be included in any work designed to address this concern such as the development of policy and/or guidelines in relation to digital technologies and workplace wellbeing and student wellbeing in higher education. Finally, by including the insights of those in non-teaching roles, this study offers an insight into the experience of remote working of this group during the Covid-19 pandemic. These insights add to the body of knowledge emerging from the Covid-19 pandemic in respect of those working in roles that had previously never engaged with remote working.

6.3.6 The usefulness of digital technologies in higher education

A unique contribution of the research is the insight into perceptions of the usefulness of digital technologies in the particular context of higher education. The study also provides evidence that a digital wellbeing intervention can support staff to understand the potential of digital technologies which is an underserved area of literature. Specifically, the findings demonstrate that the model of digital wellbeing in the workplace developed for this study was useful in re-focusing attention to the positive potential of digital technologies.

6.3.7 Intervention materials

Finally, the intervention materials are now available to interested parties through creative commons licensing on a wordpress site. The materials have been disseminated to one of these interested groups the Educational Developers of Ireland Network[22] (May 2023) and will be shared at conferences and through the researcher's existing professional networks.

[22] The **Educational Developers in Ireland Network** is a grouping of educational developers/teaching and learning experts from Irish institutes of higher education. https://www.edin.ie/

The materials are available through the researcher's WordPress site (https://wordpress.com/view/digiwellbeing.wordpress.com).

6.4 Limitations

6.4.1 Sample size limitations

The sample size limits the contribution of the study in two ways. First, planned statistical tests were not possible as the sample size was too small to run statistical tests in relation to the impact of the digital wellbeing intervention on digital stress and workplace wellbeing. Second, it was not considered appropriate to gather data in the surveys relating to participants' roles and gender due to the low numbers. Such data would have allowed for an exploration of the data based on role in the university, and could have a valuable contribution to guiding future intervention design and rollout, particularly given that 80% of participants identify as female.

6.4.2 Self-selection bias

A further limitation of the study relates to potential biases within the study sample and data collection. Participants self-selected to participate in the digital wellbeing intervention and the findings demonstrate that participants were motivated by a personal interest in workplace wellbeing and digital wellbeing. Therefore the findings may not be representative of staff within the research site and generalisation of findings to other higher education institutions could be limited. An example of how self-selection bias manifested for this study is highlighted in the findings where two participants acknowledge that while they both self-selected to participate in the study due to a personal concern regarding digital wellbeing, they were also motivated to participate to support a colleague's research study.

6.4.3 The impact of the Covid-19 pandemic on findings

The timing of the study during the Covid-19 pandemic and resulting enforced remote working may have skewed the findings due to the increased dependence on digital technologies during this time. In particular, the findings on work-home boundaries may have particularly been impacted by this specific period.

6.4.4 Limitations relating to the model of digital wellbeing in the workplace

While the findings suggest that the model of digital wellbeing used to support the digital wellbeing intervention was useful to participants in understanding digital wellbeing, the study also revealed a potential issue with using this model in practice. The model highlights three key factors contributing to digital wellbeing: individual digital wellbeing skills; organisational cultural norms and practices; and technology design. The intention of the model was to emphasise a shared responsibility between individuals, organisations and technology designers. While the findings suggest that participants are aware of the impact of cultural norms and practices in relation to their digital wellbeing, it is clear that participants feel a strong sense of responsibility for managing their own digital wellbeing. Future research and intervention design drawing on this model may require further exploration of the shared responsibility for digital wellbeing alongside the focus on individual digital wellbeing skills.

6.4.5 Discrepancies between the qualitative and quantitative data

There are a number of potential explanations to be considered in respect of the discrepancies between the qualitative and quantitative data. First, the instrument which was included in the survey to gather data in relation to workplace wellbeing,

, Peterson & Reina's (2019) Eudaimonic Workplace Wellbeing Scale (EWWS), was designed to measure workplace wellbeing from a eudaimonic perspective. Euadaimonic workplace wellbeing relates to meaning and purpose, while the complex challenges identified in the qualitative findings can be generally described as 'hedonic' aspects of workplace wellbeing, or those causing positive/negative effects. The authors of the EWWS suggest combining the survey with another instrument that measures the hedonic aspect of workplace wellbeing. This advice was followed when designing the survey for this study and the EWWS was combined with Fischer, Rueter & Reidel's (2021) Digital Stressors Scale (DSS), which was designed to measure digital stress which can be described as a negative effect on wellbeing specific to digital technologies. However, reflecting on the research findings, further insight on workplace wellbeing may have been forthcoming in the findings if the survey included measurements of workplace wellbeing from a hedonic perspective in addition to the stress relating to digital technologies alone.

The second potential explanation for the discrepancy between the data relates to potential courtesy bias. The qualitative data was gathered through focus group interviews conducted by the researcher who was known to the participants. Therefore the participants may have tailored their responses relating to the intervention based on what they perceived the researcher wanted to hear.

A third possible reason for the discrepancy between the qualitative and quantitative data is reflected in prior work relating to the specific impact of digital disconnection on wellbeing. In a review of studies relating to the impact of digital disconnection strategies, Radtke *et al.* (2022) found that the studies examined offered such a range of results in respect of quantitative measurements in respect of duration of use, performance, self-control, health and wellbeing, or social relationships as to be inconclusive. Of specific relevance to this study, many of the studies examined offered little to no evidence of the impact of digital disconnection strategies on established wellbeing measurements. However, participants of digital disconnection qualitative studies self-report positive impacts on wellbeing relating to managing their use of digital technologies (Allcott *et al.,* 2020; Nguyen, 2022). Such discrepancies between qualitative and quantitative data connect to discussions in the literature on whether digital wellbeing is a social construct rather than a psychological phenomenon (Sutton, 2020; Gui & Büchi, 2021; Vanden Abeele & Nguyen, 2021; Valasek, 2022). Vanden Abeele & Nguyen (2021) suggest that a socio-constructivist perspective of digital wellbeing "legitimizes the (un)wellness that individuals may experience, irrespective of whether there is clinical evidence of any harm to their psychology" (p. 181). Following this line of thought, the perceived impact of an intervention on wellbeing reported by participants might be expected and similarly a lack of effect of the same intervention would be demonstrated through established instruments to measure wellbeing.

6.4.6 Limitations relating to the intervention design

A limitation of this study is that the design did not involve consultation with potential participants at the initial stages of the intervention design. Such an approach could be explored in future work. An example of the value of a partnership approach to designing an intervention is evident in the qualitative findings. The findings suggest that the impact of an intervention on digital wellbeing is limited when cultural norms and practices contribute to the impact of digital technologies on workplace wellbeing. While the literature review

did inform the design of the intervention in respect of the influence of cultural norms and practices, the specific norms and practices of the research participants could have been addressed if the participants were involved in the initial research design.

6.4.7 Lack of broad base data on digital wellbeing and workplace wellbeing

On reflection, the pre-intervention survey could have been used to gather baseline data on digital wellbeing and workplace wellbeing of all staff across the research site, regardless of whether they were participating in the digital wellbeing intervention. By inviting all staff to complete the survey without the commitment of participating in the intervention, it is likely that enough responses would have been collected to allow for statistical tests. Such data would have provided insights into the digital wellbeing and workplace wellbeing for a broader population of staff at the research site, beyond those self-selecting to participate in the digital wellbeing intervention.

6.5 Recommendations

This study provides insights to guide future support for digital wellbeing in the workplace and specifically the higher education workplace. These insights relate to the provision of digital wellbeing and wellbeing interventions and also for the integration of wellbeing and digital wellbeing support into cultural norms and practices. Recommendations for future research are also proposed.

6.5.1 Recommendations regarding digital wellbeing interventions

The study provides evidence that digital wellbeing interventions can impact the digital stress and workplace wellbeing of staff in a higher education context and offers insights to inform future rollouts of such interventions. A number of recommendations can be made to guide future design and delivery of digital wellbeing and wellbeing interventions.

Based on the findings that emphasise the extent and impact on workplace wellbeing presented by digital technologies, and the evidence that this impact is experienced across a range of roles in the university, it is recommended that digital wellbeing interventions be made available to all staff in higher education.

In view of the findings that demonstrate the value of the peer discussion activities in the digital wellbeing intervention, it is recommended that digital wellbeing interventions be designed to include a strong discursive aspect.

While the model of digital wellbeing is described as useful in supporting an understanding of digital wellbeing, it is recommended that future rollouts emphasise the shared responsibility for digital wellbeing more clearly. This recommendation is based on the findings that suggest that participants perceive themselves as individually responsible for their digital wellbeing, despite the model and the structure of the digital wellbeing intervention framing digital wellbeing as a shared responsibility.

Future digital wellbeing interventions should be designed to include a balanced focus between the challenges presented by digital technologies and the positive potential of digital technologies. This recommendation is based on the evidence from the study that the focus on both aspects of digital technologies enabled participants to gain a better understanding of the positive potential of digital technologies. The model developed for this study was described as useful in this context and therefore could be used to emphasise that digital wellbeing comprises two aspects.

6.5.2 Recommendations for higher education policy & practice

Based on the findings, it is recommended that guidelines in relation to digital technologies and their impact on workplace wellbeing be developed for higher education. The findings highlight particular areas for focus including: Zoom meetings; social media; and expectations relation to email response time. As the interaction with these technologies varies from unit to unit with higher education, it is recommended that broad guidelines be developed at organisational level and adapted for local use as appropriate. The development of such guidelines could be combined with intervention delivery to maximise impact.

It is clear from the findings that there is a need to integrate wellbeing and digital wellbeing support into organisational culture and structures. The findings provide evidence that conversations around wellbeing and digital wellbeing are valued and perceived as an authentic support for digital wellbeing and workplace wellbeing. It is therefore recommended that conversations around digital wellbeing and workplace wellbeing be

integrated into local level work practices such as team meetings, as suggested in the findings.

The findings outlining the factors contributing to workplace wellbeing such as: autonomy; effective communication with colleagues; management; and role clarity. It is recommended that these findings inform future support for workplace wellbeing beyond workplace wellbeing interventions, perhaps most appropriately at local unit and school level.

6.5.3 Recommendations for future research

While this study provides valuable insight into the digital wellbeing of staff in a higher education context, further research is required to determine if these insights are representative of all staff. A more extensive study across the research site, and/or other higher education contexts would provide a more substantial evidence base to inform policy in relation to the use of digital technologies. In addition, further research conducted at a remove to the Covid-19 pandemic and the resulting enforced remote working period, could offer understandings of digital wellbeing that may be more reflective of the impact of digital technologies outside of such an unusual context.

The study provides evidence that a digital wellbeing intervention can support staff to address the challenges presented by digital technologies and in understanding the positive potential of digital technologies. Further work is required to determine if the digital wellbeing intervention has a statistically significant impact on the stress created by digital technologies (digital stress); the positive potential of digital technologies (perceived usefulness); and overall workplace wellbeing. Future work could involve rolling out the digital wellbeing intervention with a larger cohort of staff in higher education which would allow the existing survey to gather data from numbers that could be analysed using statistical testing to explore the impact of the intervention.

While this study offers valuable insights on digital wellbeing and digital wellbeing interventions from across a range of roles within the university context, further research could explore disparities between groups in relation to digital wellbeing building on prior work exploring the differences between groups in relation to work-home boundary management (Cecchinato, 2018).

The quantitative findings revealed that in relation to the negative impact of the digital wellbeing intervention in relation to social media as a distraction was explored further in the focus group interviews. However, no further understanding was gained from the interviews as the topic was not discussed in great detail. Given the increasing use of social media in the workplace (Nguyen, 2021), this topic is worthy of further analysis in future work relating to digital wellbeing in the workplace.

This study illustrates the potential impact of a digital wellbeing intervention on behaviours over a short interval of time (eight-twelve weeks post-intervention). A longitudinal study could build on this work to determine any longer term impact of the intervention. Future work could also explore how an intervention approach to supporting digital wellbeing could be rolled out in conjunction with the development of policy within the research context. Such work could draw on the findings of this study which highlight the impact that a lack of guidelines and/policy in relation to digital wellbeing in the workplace has in terms of limiting the impact of a digital wellbeing intervention.

6.6 Final reflection

When I began working in the area of learning technologies over ten years ago, digital technologies had already been widely embedded in the higher education workplace for some time. While staff could not completely avoid digital technology, they could limit their interaction with digital technologies to an extent if they preferred. When the idea for this study was first presented in late 2019, the option to work without digital technologies in higher education was fading quickly due to the increasing use of digital tools for administrative, teaching, learning and assessment purposes. By the time data was collected for this study in late 2021/early 2022, the Covid-19 pandemic and resulting enforced remote working experience had put paid to the option of limiting interaction with digital technologies almost entirely. The enforced remote working experience has highlighted both the positive potential, and the challenges of digital technologies to workplace wellbeing and has led to an increased focus on digital wellbeing. Given current discourse on future models of remote and hybrid working stemming from this period, the impetus to address digital wellbeing is likely to continue and grow in the coming years.

This study was brought to life through the participant discussions on digital wellbeing and workplace wellbeing and benefited greatly from the honesty, thoughtfulness, intelligence and astuteness of these conversations. Participants shared valuable, and very personal insights into their own experience of digital wellbeing in the work context (and beyond), and offered honest perspectives on current digital wellbeing and workplace wellbeing support. An enthusiasm for learning more about wellbeing and digital wellbeing was palpable from these conversations. Several participants affirmed their passion explicitly and even labelled themselves as 'wellbeing evangelists'. This energy has been infectious and has sustained my commitment and interest in these areas throughout the challenging data analysis and thesis writing process. I look forward to drawing on this study to inform my own future practice, and to share the findings with others.

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Appendices

Appendix A: Literature Review Initial Search Terms

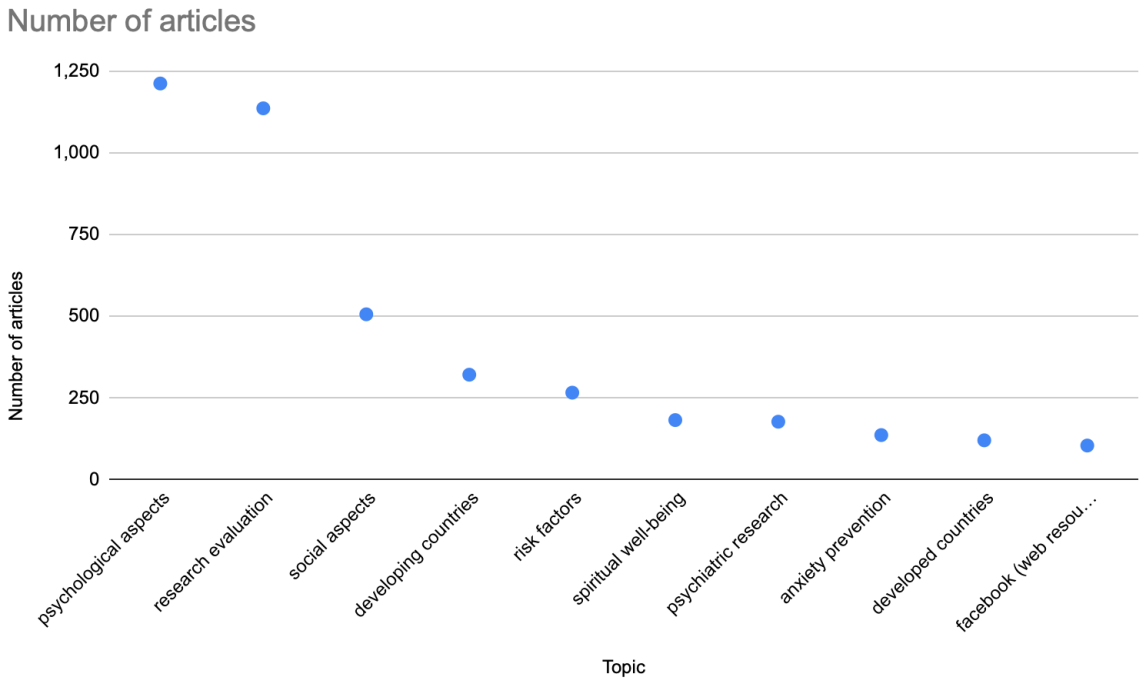
Topic	**Search terms**	**Database/s**	**Filters applied**	**Results/no of articles reviewed**	**Inclusion criteria**
Wellbeing	wellbeing OR well-being OR well being	Academic Search Complete & SCOPUS	Peer- reviewed English language Literature reviews/ scoping reviews; Date: 2000-2021	3,634 articles available - 19 papers and book chapters reviewed after screening.	Literature reviews; meta-analyses; scoping reviews; Wellbeing definitions**;** models of wellbeing; history of wellbeing research; higher education; student wellbeing; education sector generally, academic wellbeing, staff wellbeing.
Wellbeing in the workplace context	wellbeing OR well-being OR well being AND workplace	Academic Search Complete & SCOPUS	Peer reviewed; English language; Date: 2000-2021	1,500 articles; 40 papers/book chapters/policy documents/position papers reviewed after screening.	Literature reviews; meta-analyses; scoping reviews; definitions and models; policy related documents. Environmental wellbeing; physical wellbeing; health and safety - physical perspective
Wellbeing interventions	wellbeing/ well-being/well being AND workplace intervention	Academic Search Complete & SCOPUS	Peer reviewed English language Date: 2000-2020	482, 35 reviewed after screening	Literature reviews; meta-analyses; scoping reviews; evaluations; behaviour change; mental health interventions.

Wellbeing of teachers	wellbeing OR well-being OR well being AND workplace	Academic Search Complete & SCOPUS	Peer reviewed English language; Date: 2000-2020		Wellbeing professional learning initiatives across all sectors and contexts. Articles relating to digital applications to support wellbeing.
Digital wellbeing	digital wellbeing OR digital well-being OR digital well being	Academic Search Complete & SCOPUS	Peer-reviewed; English language; 2013- 2021	35 results; all reviewed	Inclusion/Exclusion criteria: All articles reviewed.
Additional searches relating to topics	Digital detox	Academic Search Complete & SCOPUS	Peer-reviewed; English language; 2013- 2021	47 articles; all reviewed	Inclusion/Exclusion criteria: All articles reviewed.
	Digital wellness	Academic Search Complete & SCOPUS	Peer-reviewed; English language; 2013- 2021	26 articles; 1 reviewed	
	Digital sociology (relating to wellbeing in digital era)	Academic Search Complete & SCOPUS	Peer-reviewed; English language; 2013- 2021	94 articles; 12 reviewed	Wellbeing initiatives; workplace stress and wellbeing.
	Set point theory OR dynamic equilibrium model (relating to wellbeing)	Academic Search Complete & SCOPUS	Peer-reviewed; English language; 2013- 2021	164 articles/book chapters; 12 reviewed	Theory of digital wellbeing; social media and wellbeing; adolescent wellbeing; the ethics of digital wellbeing; teacher wellbeing and digital; digital disconnection/detox.

					Smartphone addiction.
	Remote working or telecommuting or work from home AND workplace wellbeing OR employee wellbeing	Academic Search Complete & SCOPUS	Peer-reviewed; English language; 2013- 2021	46 articles/book chapters; 15 reviewed	
	Covid-19 & remote working	Academic Search Complete & SCOPUS	Scholarly (peer-reviewed) journals English	135 articles/book chapters; 25 reviewed	

Appendix B: Initial searches of the term ‘wellbeing’.

A cursory search of academic journal titles with the term ‘wellbeing’ returns a list of 188. Engaging with one of the two academic databases used for this study, Academic Search Complete, initial search results offer a sense of the extent and range of research relating to wellbeing. A boolean search using the terms ‘wellbeing or well-being or well being’ returns a list of 100,391 articles in the English language between 2010 and 2021, with 100 different topics. The top 10 results offer an insight into the prominent topics in the literature are illustrated in the graphic below.



Incorporating additional search terms ‘literature review or review of the literature’ returns a list of 3,634 peer-reviewed English language articles for the period 2010-2021, again covering 100 topics.

Appendix C: Feedback from pilot intervention

A What did you find most useful? 6

Reflecting on how we are spending our days with technology, ideas and techniques for re-prioritizing our time towards wellbeing, discussion about meeting time and email culture

Just to take the time to discuss digital wellbeing and to be consider it as part of worklife going forward

Thinking about the positive aspects of digital wellbeing is very healthy and uplifting.

Ability to talk openly about work-life balance issues in safe, non-judgemental way

Time to share thoughts

The openness of the conversation

What did you think DID NOT work?

6

Sometimes discussions may take a diversion and can pull from the workshop idea

I really liked it all! Time was just right, needed 90 mins, honestly nothing I would drop

Whilst it was important to tease out the negative aspects it might be helpful to spend less time on this part

Nothing really... I got what I wanted from it.

It all worked well but it would be nice to have a slot at the end to write out your personal to do list

Nothing - a great session

What do you think could be improved?

6

Maybe a breakout room type discussion could be useful for a short exercise in the workshop

I'd like the opportunity to maybe reflect/jot notes as we go along

Perhaps a follow up session?

As discussed in the session, don't bother with Seligman's video and reference to depressive.

Loved the practical examples of what could be done, would like a few more

More on PERMA and perhaps practical suggestions on how to implement

Appendix D: Tiny Goals Planner

Adapted from: Alutaybi *et al.,* (2019)

How to use this tiny goals planner

Use this document to plan for introducing some new tiny habits into your workplace to minimise digital distractions. Match existing habits from your day/week/month to some new habits to make the process of introducing new habits easier. Take a look at the example on the next page to give you an idea of what your tiny goals planner might look like.

Start small and be patient! 21 days. Changing habits is challenging and techniques to avoid digital distraction are not always intuitive (Mark, 2020). Research suggests that it takes approximately 21 days to introduce a new habit/behaviour into your routine.

Adapted from: Tackling the Fear of Missing Out: Self-help guide produced as part of the following research publication. Alutaybi, A., Al-Thani, D., McAlaney, J., & Ali, R. (2020). Combating Fear of Missing Out (FoMO) on Social Media: The FoMO-R Method. International Journal of Environmental Research and Public Health, 17(17), 6128. MDPI AG. Retrieved from http://dx.doi.org/10.3390/ijerph17176128

Example

Existing Habit	New tiny goal
Weeky: Plan for week ahead on Friday afternoon.	Block off time for ‘deep work’ tasks next week.
Daily: Log on to email on switching on laptop	If engaging in deep work today, set out of office message to indicate working offline and signal when emails will be checked today.
Weekly: Deep work time	Use full screen mode to avoid distractions by other open tabs OR close other tabs if practical.

Existing Habit	New tiny goal

Appendix E: Digital wellbeing planner

(Adapted from a template developed as part of Digital skills: Succeeding in a Digital World, Open University 2020).

This document may be useful to help you in reflecting on the learning from the course and can also help you in planning to implement strategies to support your digital wellbeing over the coming months and beyond.

Unit 1: Understanding Digital Wellbeing

What we explored
● Eudaimonic & Hedonic understandings of wellbeing ● The importance of digital wellbeing in the workplace ● Current issues relating to workplace wellbeing ● The balance approach to managing digital wellbeing (Yin/Yang model)
Identify one thing you would like to learn more about.
Consider how you might apply the learning in practice.
Reflect below on your experience of applying the learning. If you are comfortable with sharing these reflections, you can do so through the online forum on Loop.

Unit 2: Digital Distractions

What we explored.
● The myth of Multitasking ● How technology is designed to distract ● Strategies to manage digital distractions
Identify one thing you would like to learn more about.
Consider how you might apply the learning in practice.
Reflect below on your experience of applying the learning. If you are comfortable with sharing these reflections, you can do so through the online forum on Loop.

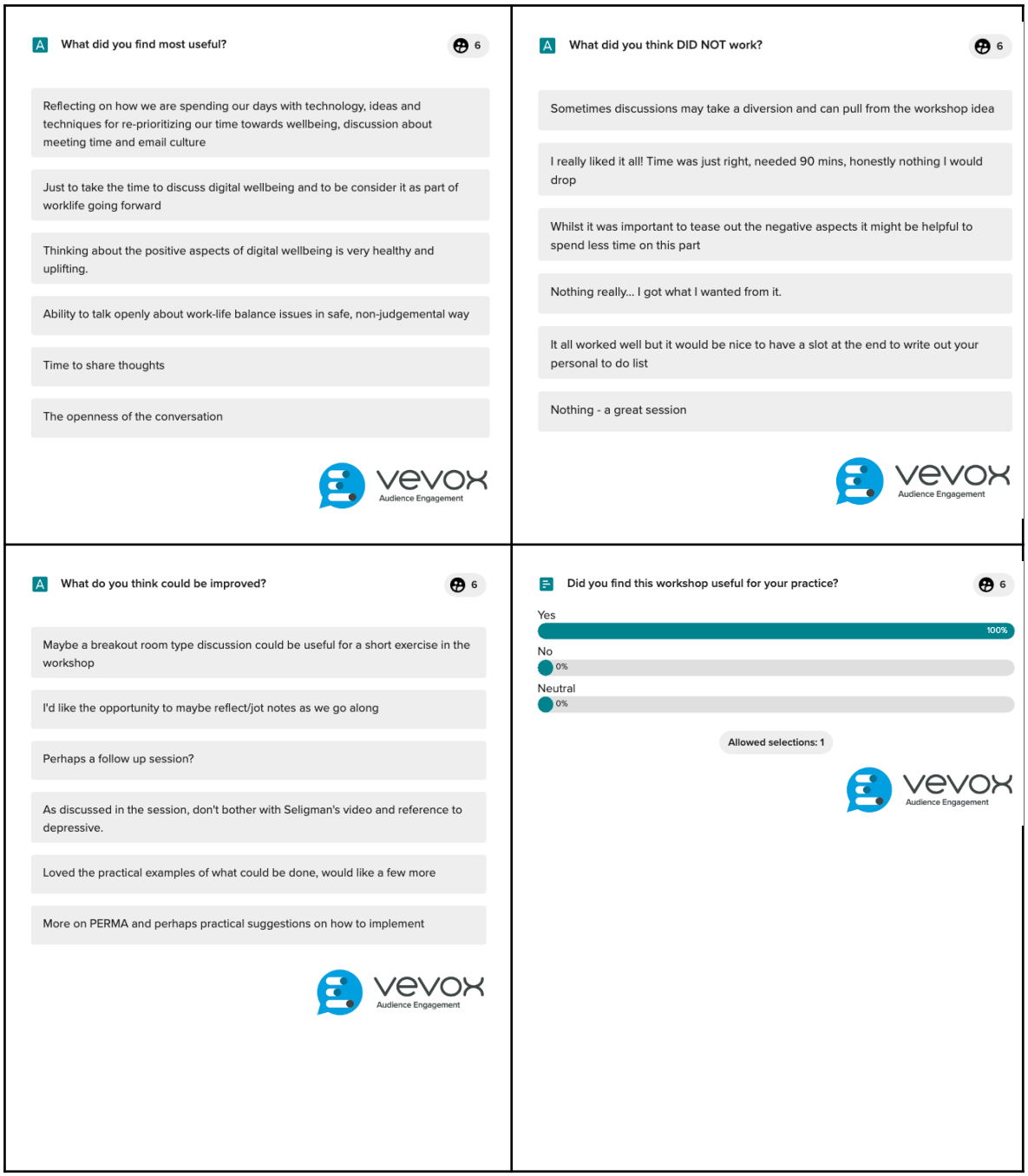
Unit 3: Work-home boundaries

What we explored.
● Boundary theory relating to workplace wellbeing ● The impact of digital technologies on work-home boundaries ● Strategies to manage work-home boundaries using digital technologies
Identify one thing you would like to learn more about.
Consider how you might apply the learning in practice.
Reflect below on your experience of applying the learning. If you are comfortable with sharing these reflections, you can do so through the online forum on Loop.

Unit 4: The positive impact of digital technologies

What we explored
● The potential positive impact of digital technologies on workplace wellbeing ● The potential of digital technologies to support workplace goals ● The DigComp Framework categories of digital competencies (skills and literacies)
Identify one thing you would like to learn more about.
Consider how you might apply the learning in practice.
Reflect below on your experience of applying the learning. If you are comfortable with sharing these reflections, you can do so through the online forum on Loop.

Appendix F: Feedback on pilot digital wellbeing intervention



Appendix G: Survey feedback from pilot reviewers

1. Clarity of questions

1. This is a very clear and concise questionnaire that I enjoyed responding to. Q4 - it's probably just me but I am not sure if I use ‘password manager’ - is that my DCU login details? Should the DCU duo authenticate app come in here? Q5 - should googling solutions be included here? Again maybe that is just me. Close to the people in my work environment may be a bit vague - I feel close to TEU gang, but not as close to others, but still close e.g. (names colleague).
2. Very interesting survey, especially the latter part! I see you have a creative commons licensing option - that wouldn’t have struck me as a content creation tool, tbh. Wonder if some might (still!) wonder what creative commons licensing is or means? Not sure how to respond to this highlighted (top left) statement. I think it needs to be worded in a more direct way. Those following seem a lot clearer. Also, just as an fyi, name of colleague suggested that we should not put 'neutral' options (similar to 'neither agree nor disagree') in the middle of a scale as it makes it too easy for people to sit on the fence. Could it be moved to the end?
3. Yes everything was easy to follow. I wonder would it be useful to have a definition of 'digital technology' at the start of the survey for people to read so everyone will be on the same wavelength as they progress through the survey? On the second question, in the answers 'Twitter' appears twice so it might be confusing for the reader to differenciate (sic) both. I wonder could you swap 'Twitter' in 'Sharing with wider communtity' (sic) with another platform? For me, I understand 'content creation tools' in Q3 but I wonder if a definition would be useful or a sentence after explaining an example (e.g., These can be...). Could Q4 be split into two? There could be one on protection of device / personal data privacy and another on health&WB / environment? Addition of DCU Finance support & ticketing services?
4. The questions are very clear and easy to follow and understand.

Researcher response:

Suggestions adopted with the following exceptions.

Not adopting suggestion re defining digital technologies as: (a) The technologies are listed comprehensively using the DigComp framework categories as a reference point and (b) There is no agreed definition of digital technologies in the literature which seems to emerge from the rapid development of technologies. Might be something to address in the literature review though?

The debate on the neutral option is addressed in the survey design section of the methodology chapter. I have opted to include it. I think the reference to putting at the end is a misunderstanding as cannot find anything on this in the literature on survey design that I reviewed.

2. Clarity of instructions (any issues)

1. Yes clear, apart from some question numbering - see comments below.
2. No.
3. No issues on my side of things. I think the examples you give in a lot of the questions really works.

3. Any issues with language e.g. cultural sensitivities or plain language issues

1. No issues on my side of things. I think the examples you give in a lot of the questions really works.
2. No.
3. No.

4. Issues relating to inclusivity/accessibility?

1. No issues imo.
2. No.
3. No issue in my opinion.

5. Timing for completion

1. I think it was 15 minutes but I was also jotting down notes for feedback!
2. 20 mins, and I was noting these comments as I went along (and responded to you on zoom chat :-)
3. I'm not sure exactly how long I took. I think approximately 15 mins - about that anyway. It did not feel onerous or too long compared to other surveys.

6. Missing questions/parts of questions

1. No bar the one above that could be spilt (question 4) above as noted above.
2. No.
3. No.

7. Superfluous questions/parts of questions

1. No.
2. No.
3. No.

8. Question order - does the order of the survey make sense?

1. Yes the order makes sense - the definitions (as pointed out above) may help the reader as they progress through the survey.
2. Question order made sense to me.

Appendix H: Final survey questions

Pre-intervention survey

Section 1: Digital tools

Q1. Select all of the **information and data management** digital technologies that you use in the workplace. These may be tools you use to: Browse, search and filter data, information and digital content, evaluate data, information and digital content, manage data, information and digital content.

- Internet search engines e.g. Google
- Internet search engine filters e.g. filtering Google searches by content category such as 'video'
- Wikipedia
- Online databases
- NVivo for research data management
- SPSS for research data management
- Survey tools e.g. Qualtrics/Survey Monkey
- Course builder (DCU system)
- Student Records System (DCU system)
- Anonymous Marking System (DCU system)
- Library databases (DCU)
- IRIS (DCU system)
- GURU (DCU system)
- Agresso Finance (DCU system)
- File management - local file management on your device
- File management - Google Drive
- Others

Q2. Select all of the **communication and collaboration** digital technologies that you use in the workplace. These can be tools that you use to: Interact, share and collaborate with colleagues within the University, Interact, share and collaborate with peers outside of the University, Manage your digital identity.

- Gmail
- Video conferencing tools e.g. Zoom
- Messaging applications e.g. WhatsApp/Zoom messenger Sharing Google documents
- Sharing Google Calendar
- Sharing files and folders through Google Drive
- Twitter
- LinkedIn
- Research Gate
- Academia
- Video publishing tools e.g. YouTube, Vimeo Audio publishing tools e.g. Podbean Others

Q3. Select all of the **content creation tools** that you use in the workplace. These are tools that you may use to: Create and edit digital content from scratch; adapt, improve and/integrate existing content for a new purpose; ensure correct attribution for re-used content, programme/code.

- Google Applications content creation tools (Docs, Sheets etc.)
- Microsoft office 365 (Excel, MS Word, etc.)
- Web page editor (Drupal)
- Unicam video recording
- Video recording studio
- Animation creation tools e.g. Videoscribe/Powtoon

- Audio content creation tools e.g. Audacity;
- Video editing tools e.g. Camstasia/iMovie
- Reflect ePortfolio platform
- Tools to improve the accessibility of documents and other resources e.g. Microsoft Office accessibility features/Adobe Acrobat Pro
- Creative Commons licenses Programming tools
- Others

Q4. Please select all of the **digital tools you use to ensure safety** in the workplace. These can be tools you use to protect: your devices, your personal data privacy, your health and wellbeing, the environment.

- Anti-malware e.g. McAfee Antivirus/Norton Antivirus
- Password management tools e.g. Google password manager/Apple Keychain/1Password
- Screen time management tools e.g. Digital wellbeing settings on Android devices/Freedom/Social Fever
- Do not disturb settings on your mobile phone/other devices
- Power saving tools e.g. screen saver
- Wordpress, google sites
- Other

Q5. Select all of the digital technologies that you use in the workplace **to solve problems relating to your work**. These can be tools that you use to: solve technical issues e.g. the ISS web pages, loop (VLE) support pages, Assess your own digital needs such as customising digital environments to personal needs e.g. accessibility tools, identify your training needs relating to digital technologies.

- DCU ISS support pages & ticketing service
- DCU Loop support pages & ticketing service
- Estates ticketing service
- Finance ticket service
- Text to speech software
- Dictation software e.g. Dragon
- Screen reading/Magnification Software
- Adaptive Keyboard/mouse
- Loop systems e.g. Accessibility Block
- Integrated accessibility tools (Google Apps)
- Apple integrated accessibility tools (Apple products) Integrated accessibility tools (Microsoft Office) Online digital skills assessment tools
- Others

Q6. If your role involves teaching or training, please select all of the **teaching and learning tools** that you use in the workplace.

- Virtual learning environment (Loop & Zoom)
- Unicam
- Video recording studio
- Polling tools e.g. Vevox, Zoom polls, Mentimeter Google Classroom
- Google Slides
- Google Docs
- Google Drive
- Others

Q7. This question relates to your wellbeing in the workplace and consists of a number of statements that may describe how you feel within your workplace.

Please indicate your agreement with the following statements (strongly agree, agree, neither agree nor disagree, disagree, strongly agree).

1. Among the people I work with regularly, I feel there is a sense of collegiality.
2. I feel close to the people I work with within the work environment.
3. feel connected to others within the work environment.
4. I consider the people I work with to be my friends.
5. I am emotionally energised at work
6. I feel that my work has a purpose
7. My work is important to me
8. I feel that I can continue to develop at work

Q8. This question explores **how useful (or not) you find digital technologies** in achieving your workplace goals. Please indicate your agreement with the following statements (strongly agree, agree, neither agree nor disagree, disagree, strongly agree).

1. The digital technologies available to me at work do not fit well with the demands of my role.
2. I do not think that I gain enough benefits from the digital technologies that are provided for me at work.
3. The digital technologies that I use at work are full of too many functionalities that I never use.
4. Too many different digital technologies and systems are required to fulfill the tasks I have to do on a daily basis.
5. I think that most of the digital technologies that I am supplied with at work are not useful enough and I could work without them.

Q9. This question explores your relationship with digital technologies in relation to Organisational Culture. Please indicate your agreement with the following statements relating to **digital technologies and** organisational culture.

1. Due to digital technologies I have too much to do with the problems of others.
2. I think that digital technologies generate too much of an expectation that I have to be reachable everywhere and at any time.
3. Too much time gets lost at work because of irrelevant communication with other people on social media.
4. I feel that digital technologies create unwanted social norms (e.g. the expectation that emails should be answered right away).
5. It is too hard to take a break from social interaction at work due to the communication possibilities of digital technologies.

Q10. This question explores your relationship with digital technologies in relation to your workload. Please indicate your agreements with the following statements relating to **digital technologies and work overload**.

1. Due to digital technologies I have too much to do.
2. Due to digital technologies I have too wide a variety of things to do at work.
3. Digital technologies make it too easy for other individuals to send me additional work.
4. I never have any spare time, as my schedule it too tightly organised by digital technologies.
5. There is a constant surge of work- related information coming in through digital technologies that I just cannot keep up with.

Q11. This question explores your relationship with digital technologies in relation to Work-home Conflicts. Please indicate your agreements with the following statements relating to **digital technologies and work-home conflicts**.

1. I feel that my private life suffers due to digital technologies enabling work-related problems to reach me everywhere.
2. It is too hard for me to keep my private life and work life separated due to digital technologies.

3. Digital technologies make it harder to create clear boundaries between my private and work life
4. My work-life balance suffers due to digital technologies.
5. The ubiquity of digital technologies disturbs my work-life balance.

Q12 . Is there anything else you would like to add in relation to your use of digital technologies in the workplace?

Post-intervention survey

Q1. This question relates to your wellbeing in the workplace and consists of a number of statements that may describe how you feel within your workplace.

Please indicate your agreement with the following statements (strongly agree, agree, neither agree nor disagree, disagree, strongly agree).

1. Among the people I work with regularly, I feel there is a sense of collegiality.
2. I feel close to the people I work with within the work environment.
3. feel connected to others within the work environment.
4. I consider the people I work with to be my friends.
5. I am emotionally energised at work
6. I feel that my work has a purpose
7. My work is important to me
8. I feel that I can continue to develop at work

Q2. This question explores **how useful (or not) you find digital technologies** in achieving your workplace goals. Please indicate your agreement with the following statements (strongly agree, agree, neither agree nor disagree, disagree, strongly agree).

6. The digital technologies available to me at work do not fit well with the demands of my role.
7. I do not think that I gain enough benefits from the digital technologies that are provided for me at work.
8. The digital technologies that I use at work are full of too many functionalities that I never use.
9. Too many different digital technologies and systems are required to fulfill the tasks I have to do on a daily basis.
10. I think that most of the digital technologies that I am supplied with at work are not useful enough and I could work without them.

Q3. This question explores your relationship with digital technologies in relation to Organisational Culture. Please indicate your agreement with the following statements relating to **digital technologies and** organisational culture.

6. Due to digital technologies I have too much to do with the problems of others.
7. I think that digital technologies generate too much of an expectation that I have to be reachable everywhere and at any time.
8. Too much time gets lost at work because of irrelevant communication with other people on social media.
9. I feel that digital technologies create unwanted social norms (e.g. the expectation that emails should be answered right away).
10. It is too hard to take a break from social interaction at work due to the communication possibilities of digital technologies.

Q4. This question explores your relationship with digital technologies in relation to your workload. Please indicate your agreements with the following statements relating to **digital technologies and work overload**.

6. Due to digital technologies I have too much to do.
7. Due to digital technologies I have too wide a variety of things to do at work.

8. Digital technologies make it too easy for other individuals to send me additional work.
9. I never have any spare time, as my schedule it too tightly organised by digital technologies.
10. There is a constant surge of work- related information coming in through digital technologies that I just cannot keep up with.

Q5. This question explores your relationship with digital technologies in relation to Work-home Conflicts. Please indicate your agreements with the following statements relating to **digital technologies and work-home conflicts**.

6. I feel that my private life suffers due to digital technologies enabling work-related problems to reach me everywhere.
7. It is too hard for me to keep my private life and work life separated due to digital technologies.
8. Digital technologies make it harder to create clear boundaries between my private and work life
9. My work-life balance suffers due to digital technologies.
10. The ubiquity of digital technologies disturbs my work-life balance.

Q6. Which aspect/s of the digital wellbeing intervention did you find most useful and why?

Q7. Which aspect/s of the digital wellbeing intervention did you find least useful and why?

Q8. Has the way that you use digital technologies changed since engaging with the digital wellbeing initiative? If so, in what way?

Q9. Are there issues relating to your use of digital technologies that you would like to see addressed in future rollouts of this intervention?

Q10. Do you have any suggestions for improving the digital wellbeing intervention?

Q11. Do you plan to continue using any of the strategies to manage digital wellbeing explored in the workshops?

Appendix I: Focus group interview schedule

Questions and probes

Q1. Did the content of the initiative reflect the key issues relating to digital wellbeing in your own context?

Q2. In the survey there was broad agreement that the digital tools that we have at our disposal are a good fit to the demands of our work. Do you think that anything can be improved to support you to use the technologies that you have in a better way?

Q3. There was broad agreement in the survey that the constant surge of work related information is difficult to manage. However, responses were split in terms of whether that surge of information adds to your workload. Does the overload of information coming through digital technologies impact on your wellbeing in other ways?

Q4. It was interesting to see a high level of workplace wellbeing reported in the survey. Is there anything in particular to your workplace context that supports your workplace wellbeing? What do you feel that the institution can do better in terms of supporting wellbeing?

Q5. What was your motivation for taking part in the workshops? What are the barriers to attending? Did you find the model of digital wellbeing useful?

Free Probes

I see a few people nodding, would you like to come in on that point?

Could you clarify what you mean please?

Anybody else want to comment on what x and y have shared?

That's really interesting. Can you expand a little please?

If something comes to you when others are speaking, feel free to pop it in the chat text box.

I'm interested to hear from other people on that issue raised by x….

Just to pick up on what you said there…

I'm going to throw it open to the floor then…