The impact of work-related technology and boundary management on work-family conflict and enrichment during COVID-19

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Abstract

Technology has become a ubiquitous force in modern life, leading to the blurring of work-life boundaries. The recent global pandemic brought this to the fore, particularly in the context of academia, where the blurring of boundaries were already apparent. This study explores whether and how information communication technology (ICT) blurred boundaries and impacted work-family conflict (WFC) and work-family enrichment (WFE) during the COVID-19 pandemic. This examination is critical to optimise the value that ICTs may provide for the well-being of academics and their families. Drawing on semi-structured interviews, data was collected from 14 academics with children. Findings indicated that ICT triggered various stressors leading to WFC, while simultaneously improving participants' availability leading to WFE. Managing boundaries was complex and depended on preferences and resources to enact these preferences. The findings highlight the paradoxical consequences of ICT, raising questions about increasing complexity in academic work and the need for more sustainable flexible work models.

Keywords: work-family conflict, work-family enrichment, boundary management, workplace technology

Introduction

The ubiquitous nature of technology in modern life is hard to avoid and the sudden implementation of global remote working triggered by the COVID-19 pandemic brought this issue into sharp focus. Initially, the pandemic put remote working and work-related technology firmly on the agenda, as employers and employees alike suddenly scrambled to work remotely. The pandemic had a particularly profound impact on academia with the sudden closure of schools and universities and the rapid shift to deliver online teaching. This led to the negotiation of work in the home with disruptions to space, routines and family life in general (Adisa et al., 2022). It also led to the almost complete negotiation of technology into work tasks, particularly

online teaching (Ziemba and Eisenbardt, 2021), bringing major disruption (Adisa et al., 2022) and highlighting the extent to which some institutions were more ready than others (Tokareva et al., 2021). Against this backdrop, technology has undoubtedly changed *how*, *when* and *where* work is performed (Field and Chan, 2018; McDowall and Kinman, 2017). As we emerge from the pandemic, there is a sense that the workplace has changed forever (Murphy, 2021). Yet, how society, organisations and employees will adapt is still not entirely clear.

The increasing and sometimes constant presence of Information Communication Technologies (ICTs) in contemporary society has been associated with higher levels of work-life conflict (WFC) - defined as 'when pressures arising in one role are incompatible with pressures in another role' (Greenhaus and Beutell, 1985, p. 77). In considering these associations, it is helpful to define ICTs. Zuppo (2012, p.13) states that 'the primary definition of information and communication technologies revolves around the devices and infrastructures that facilitate the transfer of information through digital means.' It includes the internet, file creation and sharing, video conferencing, lecture recording, emails, mobile phone usage, text messaging, intranet platforms and social media. It is worth noting that ICTs operate as part of a wider social system through which employees interact (Chesley, 2014). Studies have reported associations between ICT use and outcomes such as increased workloads, longer working hours, work extensification and overall higher levels of WFC (e.g. Fenner and Renn, 2010; Ter Hoeven et al., 2016), leading to stress (Fein et al., 2017) and an inability to switch off (Fenner and Renn, 2010). At the same time, ICTs have been associated with high levels of work-family enrichment (WFE) - where experiences in the work domain can enhance experiences in the life domain and vice-versa (Greenhaus and Powell, 2006). For instance, ICTs have been associated with greater temporal/physical flexibility (Mazmanian, Orlikowski and Yates, 2013), and enhanced perceptions of autonomy (Potter et al., 2022), productivity (Chesley, 2014) and control over interactions (Mazmanian et al., 2013). Some studies (e.g. Ter

Hoeven et al., 2016) suggest that work-related ICTs can be a concurrent source of demands and resources at work. However, the extent to which WFC or WFE manifests will depend on whether individuals can create temporal, spatial, cognitive and emotional boundaries between their work and family lives (Nippert-Eng, 1996).

Whilst much is known about the work-life interface in general, a number of gaps remain with regard to tensions that exist particularly regarding ICT use. While flexible work practices and high levels of autonomy are well established job design features in academia (Beigi, Shirmohammadi and Stewart, 2018), and academics have extensively integrated ICTs into their roles since the 1990s (Heijstra and Rafnsdottir, 2010), there has been very little research pertaining to the influence of ICTs on the work-life interface in academia (Adisa et al., 2022; Heiden et al., 2021; Potter et al., 2022). Extant research has produced contradictory findings regarding the consequences of ICTs for academics suggesting that it can either be a benefit or a curse (Currie and Eveline, 2011; Fernback, 2018; Heiden et al., 2021; Heijstra and Rafnsdottir, 2010; Potter et al., 2022). Emergent research in the wider ICT and work-life balance literature (e.g. Gadeyne et al., 2018; Mazmanian et al., 2013; Ter Hoeven et al., 2016) has also produced inconsistent findings suggesting greater complexity and a need for further investigation. Mazmanian et al. (2013) highlight the tensions regarding autonomy and mobile email devices and suggest that there is a need for a better understanding of the implications of ICTs for different professions and different technologies. Prior to the pandemic, researchers had warned against taking a reactive stance to the changes being brought about by work-related technology, calling instead for an evidence-led approach in the interest of maximising technology and minimising deleterious effects for all concerned (Schlachter et al., 2018). Despite this, the requirement to adapt to online teaching which was thrust very suddenly upon academics at the onset of the pandemic, presented a unique circumstance where widely

unfamiliar ICTs seriously challenged the work-life interface and accelerated the potential for boundary blurring.

This study aims to explore the experiences of academics with young children working in an Irish university during the COVID-19 pandemic in relation to whether and how work-related use of ICTs affected their WFC and WFE. It contributes to the growing conversation about the potential contradictory consequences of work-related technology and the need to build on the long-established theories of work design and work stress, many of which predate modern technology. This is important because the autonomy paradox challenges the long held notion that job autonomy and flexibility represent attractive features of academic work (Menzies and Newson, 2007), despite evidence that workloads are ever-increasing (Kraimer et al., 2019). The extant evidence of further pressures associated with ICT use limits the extent to which work-life balance can be achieved, which could make academia a much less attractive career option in the future. While some recent research has examined aspects of work-life balance among academics during the pandemic (e.g., Adisa et al., 2022), it does so by looking at WFC only. Indeed, most research on the work/life interface has tended to focus on conflict (Vaziri et al., 2020). Our study considers the nuances of WFC and WFE in tandem in order to better understand how they relate to work-life balance (Vaziri et al., 2020). It therefore provides a more comprehensive understanding of how unprecedented, situational factors can influence preferences for integration and segmentation in a university setting. Schlachter et al. (2018) note the potential for studies to consider reflections of different members from the same organisation about expectations and work processes regarding ICT use.

The paper is structured as follows. First, the literature pertaining to WFC, WFE and boundary theory is reviewed. Emergent literature on the interplay between these constructs and work-related ICTs is also considered. Then the methodology adopted in the study is described. This is followed by a review of the findings, which are summarised according to the main

themes that emerged from the data. Finally, the findings and their implications for practice and future research are discussed.

Theoretical Background

Covid-19 forced organisations, individuals and governments to reconsider where and how work gets done. The adoption of remote working by organisations prior to the pandemic was not widespread, despite it offering flexibility to employees and opportunities to enrich both their work and family lives (McNall et al., 2010). The increase in remote working opportunities has been associated with the increased prevalence of ICTs, which have also been associated with mixed outcomes. Some studies report associations between ICT use and higher WFC (Beigi et al., 2018), while others suggest that it can lead to higher WFE (McNall et al., 2009). Whether WFC or WFE manifests will depend on the extent to which individuals can create temporal, spatial, cognitive and emotional boundaries between their work and family lives (Nippert-Eng, 1996).

Work-Family Conflict (WFC)

The work-life literature is characterised by a conflict perspective, which is useful in elucidating negative aspects of the work/life interface (Kossek et al., 2020). Greenhaus and Beutell's (1985) seminal work on interrole WFC defines it as 'when pressures arising in one role are incompatible with pressures in another role' (p. 77). This conflict can appear as time-based, strain-based and behaviour-based and can stem from work or family (Greenhaus and Beutell, 1985), with time commitments from one role possibly preventing compliance with expectations from another and pressure causing preoccupation with one role when physically engaged with another. Greenhaus and Beutell (1985) suggest that WFC includes strain-based symptoms (e.g. anxiety and fatigue) and behaviour-based symptoms (e.g. having a sense of being caught between two value systems or difficulty complying with role expectations). Furthermore, they suggest that excessive time in one role can produce strain in another. Research has found that

WFC negatively impacts job-life satisfaction (Kossek and Ozeki, 1998) and employee well-being (Fein et al., 2017). Researchers have also established associations between WFC, role overload and job stress (Fein et al., 2017). Autonomy is a feature of job design that reflects the degree of status that an individual holds and often represents success in a profession, giving people the freedom to exercise judgements and the authority to set physical and temporal boundaries at work (Engel, 1970). Yet, there are times when individuals restrict their autonomy to engage in mobile technologies even beyond their 'normal' working day. In a study of knowledge professionals, Mazmanian et al. (2013) found that rather than restricting their discretion or authority or making them feel trapped, participants reported that these technologies provided greater flexibility and control over their work. This is relevant to the current study because academics have typically enjoyed a high degree of autonomy in their work (Menzies and Newson, 2007). As an enabler of where/when individuals can work, work-related ICTs can infringe on family time and create pressures that lead to WFC (Adisa et al., 2022; Currie and Eveline, 2011), which can reduce employees' well-being (see Beauregard, Basile and Canónico, 2019 for a review). Autonomy is thus an unexpected stressor in the conceptualisation of WFC as while it is typically associated with positive outcomes (Engel,1970), in this context it represents a potential source of overload. This has given rise to the notion of 'the autonomy paradox' reflected in professionals' 'ongoing navigation of the tension between their interests in personal autonomy on the one hand and their professional commitment to colleagues and clients on the other' (Mazmanian et al., 2013, p. 1337).

Work-Family Conflict, Information Communication Technologies and The 'Autonomy' Paradox

Being 'always on' has emerged as a stable theme in the literature (McDowall and Kinman, 2017), resulting in a 'cycle of responsiveness' as theorised by Perlow (2012, p. 6) in her research regarding smartphone use. In their US study of knowledge professionals, Mazmanian

et al. (2013, p.1345) also associated constant connectivity with 'escalating engagement' with work emails among users of mobile devices. Similarly, Jarvenpaa and Lang's (2005) empowerment/enslavement paradox warns about how working *anywhere, anytime* can possibly become *everywhere all of the time*. Work-related ICTs have also been associated with compulsive checking behaviours causing interruptions (Jarvenpaa and Lang, 2005; Potter et al., 2022; Ter Hoeven et al., 2016) and multi-tasking, resulting in unexpected increased workloads (Chesley, 2014; Ter Hoeven et al., 2016), longer working hours (Fenner and Renn, 2010), work extensification (Ter Hoeven et al., 2016), information overload (Chesley, 2014), technostress (Tarafdar et al., 2007), and overall higher levels of WFC (Fenner and Renn, 2010). A sense of work intensification triggered by ICTs is also evident in the literature (Chesley, 2014; Kelliher and Anderson, 2010; Ter Hoeven et al., 2016), serving as an antecedent for stress (Fein et al., 2017) and an inability to switch off (Fenner and Renn, 2010). In turn, this prevents post-work recovery (Derks and Bakker, 2014; Derks et al., 2016), negatively impacting sleep quality and resulting in next day depletion and reduced work engagement. Consequently, research highlights the need for boundary creation around work-related ICTs while working from home (WFH) to enable psychological detachment from work (Barber and Jenkins, 2014). This suggests that organisations need to be careful and creative when attempting to help employees manage WFC, particularly as mobile ICTs seem to play a bigger role in the development of WFC.

The use of mobile email and smartphones for work became particularly relevant during the COVID-19 pandemic as employees leaned heavily on these technologies (Steffensen et al., 2021). Long before the pandemic, suggestions of functional/dysfunctional usage patterns were exemplified by Middleton and Cukier (2006) amongst Blackberry users, who simultaneously valued how they enabled them to be available anytime, anywhere, while also recognising that their mobile email usage infringed upon personal space/time and work-flow. In their coining

of the term autonomy paradox, Mazmanian et al. (2013, p. 1337) found that employees who chose to use mobile email to work wherever, whenever found that their autonomy was reduced by virtue of working everywhere all of the time. Other studies consider how potent email can be in provoking emotional responses that spillover into personal lives (Butts et al., 2015) and as a source of overload and stress due to perceived organisational pressure to be constantly available (Barley et al., 2011). Although research related to the pandemic is somewhat limited, email use was reported as a source of WFC (Steffensen et al., 2021). More generally, Mazmanian et al. (2013) highlight the tensions regarding autonomy and mobile email devices and suggest that there is a need for a better understanding of the implications of ICTs for different professions and different technologies.

ICTs and WFC among academics

Research shows ambivalence about whether or not ICTs provide greater control over academic work schedules, finding that email has become more salient, eroding academics' time (Potter et al., 2022), has increased their work-pace (Currie and Eveline, 2011), and has led to feelings of guilt about how to manage this work-pace (Vostal, 2015). Menzies and Newson (2008, p. 508) argue that ICTs promote a production-oriented academic work environment to ensure one can 'keep up', 'link up' and 'speed up'. One study among 20 academics with children in Iceland found that work-related ICTs enabled flexibility but increased WFC (Heijstra and Rafnsdottir, 2010). It also found that ICTs raised availability expectations and consequently workload, making it difficult for academics to disengage from work. Moreover, participants experienced difficulty juggling work/life roles as ICTs turned home into work. Similarly, an Australian study among 44 academics with young children found that ICTs created work intensification at work *and* at home through increased pressure and work-pace (Currie and Eveline, 2011). Furthermore, they experienced work extensification arising from ICTs through expectations of availability, increased working hours, and the intrusion of work into their homes. In their UK

study of academics and bankers, Adisa et al. (2017) reported extended working hours, intrusion into non-work life, and potential negative health consequences as common concerns about work-related ICTs. In general, there has been little research pertaining to the influence of ICTs on academics' work/life interface during the COVID-19 pandemic (Adisa et al., 2022; Heiden et al., 2021; Potter et al., 2022). The lack of a single WFC/ICT framework has triggered research into the ways in which work-related ICTs can negatively impact the work/life interface, providing a suitable lens through which the first research question can be explored:

Research Question 1. Did work-related ICT use contribute to WFC among academics with children during the COVID-19 pandemic?

Work-Family Enrichment (WFE)

In contrast to WFC, a more positive framing of the work/life interface in the form of WFE has provided some balance to the literature. While Greenhaus and Powell's (2006) conceptualisation of WFE is the predominant construct to explore this positive side, related constructs are evident, including work-family facilitation (Wayne et al., 2004) and positive spillover (Hanson et al., 2006). Similarities between these concepts are apparent but they differ in how they are operationalised. In this regard, and because they have different antecedents, they are not regarded as 'two sides of the same coin' (Zhou and Buehler, 2016).

Greenhaus and Powell's (2006) WFE model states that experiences in the work domain can enhance experiences in the life domain and vice-versa. The construct identifies different types of work/family resources that can promote WFE and that are generated in roles in either the work or life domains. Furthermore, WFE includes instrumental and affective pathways by which these resources function. Prior research has identified consequences of WFE such as higher organisational commitment, lower turnover intention, greater work/life satisfaction and better physical and mental health (McNall et al., 2010), positive associations between flexibility and perceived work-family control (Wayne et al., 2004) and improved overall levels

of WFE and greater job satisfaction (McNall et al., 2009). Literature regarding ICTs as previously noted has hitherto highlighted only negative consequences for the work/life interface. Next, the focus will redress the balance by considering positive consequences.

Work-Family Enrichment, Information Communication Technologies and Positive Outcomes

WFE has not been the default position in the emergent ICT/work-life literature, however, it isn't entirely absent either. Some scholars highlight positive outcomes, but they are not framed as WFE. This is perhaps due to flexibility being regarded as the only relevant WFE resource that technology can be 'assigned' to, which is perhaps a limitation of the construct, but a highly functional resource nonetheless. ICTs that enable greater temporal/physical flexibility (Mazmanian et al., 2013; Middleton and Cukier, 2006), that engender increased perceptions of autonomy (Jarvenpaa and Lang, 2005), that give rise to productivity gains (Chesley, 2014), enhanced control over interactions (Mazmanian et al., 2013) and communication efficiencies (Barley et al., 2011) are all positive outcomes identified in prior studies. However, more recent studies (Ter Hoeven et al., 2016) posit that work-related ICTs can be a concurrent source of both demands and resources within the work domain.

ICTs and WFE among academics

While the earlier review of studies of WFC among academics considered negative outcomes, some positive outcomes for ICTs were also identified. Drawing on ICT-enabled flexibility, Heijstra and Rafnsdottir (2010) found that academics valued how the internet increased the flexible nature of their job and how it helped them manage their WFE. Similarly, Currie and Eveline (2011) identified multi-tasking, flexible childcare and enabled autonomy as benefits of ICTs among Australian academics. Relatedly, Adisa and colleagues (2017) identified flexibility as a key positive outcome in their study. Consequently, the WFE construct and associated literature on positive outcomes of ICTs provide a suitable mechanism for exploring

whether work-related ICT use contributed to WFE during the COVID-19 pandemic. This leads to the second research question:

Research Question 2. Did work-related ICT use contribute to work-family enrichment (WFE) among academics with children during the COVID-19 pandemic?

Boundary Management

While a focus on the negative and positive outcomes of ICTs provides a solid basis for understanding the work/life interface, questions remain about *how* this interface can be managed. In particular, the extent to which individual choices are embedded within layers of family, work and societal expectations has been largely overlooked (Rothbard and Ollier-Malaterre, 2016). The concept of boundaries between the work/life domains emerged in the literature during the 1990s. Nippert-Eng (1996) suggested that employees created temporal, spatial, cognitive and emotional boundaries with some preferring to integrate their non-work/work roles and others preferring to segment them. Related research suggests that integration/segmentation are positioned along a continuum but are experienced differently by individuals (Kreiner et al., 2009). Ashforth et al. (2000) expanded the focus from inter-role conflict to examine how individuals moved between roles, known as role transition. This involved the creation, maintenance and crossing of boundaries as a means of simplifying and ordering an individual's environment, enabling them to focus on whichever one is most salient at that time. This is the fundamental definition of boundary theory but it is far more nuanced than that and has developed considerably. Role boundaries are usually bound in space and time, are embedded in social domains and local contexts and are characterised by permeability and flexibility. Permeable boundaries permit intrusions e.g. interrupting work to take a personal call, while flexible boundaries relate to the ability to leave one domain to address the needs of another e.g. leaving work early to collect a sick child (Hunter et al., 2019). Within this theory, role identities are socially constructed definitions of the self in a role and comprise core and

peripheral features that might include aspects of the context(s) that help situate the role identity as location (e.g. university campus) or role set members (e.g. students). It is the concept of contrast that makes role identities relevant to the role transitions. The greater the contrast, the more difficult the transition can be, something Ashforth and colleagues (2000, p. 475) describe as 'switching cognitive gears'. Within this framework exiting and entering roles involves the psychological movement of role-switching and is facilitated by important rites of passage signalling role changes to the individual and sometimes to role set members. Moreover, time to transition has been linked to positive work/life boundary management (Kossek, 2016).

A key distinction is made in the literature between boundary management preference and enactment (Kossek and Lautsch, 2012). Without this distinction, consideration of the consequences of boundary management is problematic because how boundaries are managed may not be by choice leading to loss of boundary control. This suggests that clear-cut segmentation/integration strategies are not realistic particularly in the digital age, where technology regularly blurs boundaries (Field and Chan, 2018). Research has provided valuable insight in this regard by identifying different boundary management characteristics including perceptions of boundary control, cross-role interruption behaviours and work/family identity centralities (Kossek et al., 2012). In so doing, it helps exemplify personal outcomes when boundary management can or cannot be enacted. For instance, perception of boundary control relates to how in control an individual feels rather than whether or not a segmentation/integration strategy is effective or realistic for them. This provides real insight into how personal outcomes are formed and is more reflective of how individuals manage these domains in technology dependent work environments. Boundary theory has also been extended to include behaviours that both integrate *and* segment daily, for example, switching from research to teaching to administration in any given day. Moreover, this research notes varying levels of technological dependence and the differential impact that this dependency can have

for individuals. Clearly, technology has the ability to cross boundaries temporally and physically, but as the literature indicates, the issue is more complex than simply deciding to use this technology or not, an issue that emergent research is continuing to wrestle with.

Boundary Management and Information Communication Technologies

To date, research has produced mixed results on the role and value of boundary management strategies and how technology impacts work-family domains with some research suggesting that ICTs can increase/decrease boundary control depending on organisational norms (Gadeyne et al., 2018). Research also values boundary creation around ICTs for well-being (Gombert et al., 2018) and psychological detachment (Barber and Jenkins, 2014), however, Derks et al. (2016) found a differential impact depending on preferences. Meanwhile, Cousins and Robey (2015) question the extremes of boundary strategies arguing that employees engage in personalised practices to suit different situations, which suggests potentially different individual outcomes for the work/life interface.

This evidence suggests that the impact of technology on the work/ life interface is influenced by boundary management preferences. However, one must ask who has control over this? Is it decided by the employee or is it imposed upon them? Is it influenced by organisational policy, norms or even legislation? These questions are particularly pertinent during unique situations such as those encountered during the COVID-19 pandemic. In this study, we propose that boundary management will provide a key linking mechanism between WFC and WFE and we investigate if boundary management preference influenced its impact.

Research Question 3. Did boundary management preference influence the impact of work-related ICT use on the work/life interface among academics with children during the COVID-19 pandemic?

METHOD

The Research Context

The study was focused on academics who were parents working in a university setting in Ireland. While academics typically experience flexibility in their work, they are reported to be facing increased challenges and demands regarding new modes of teaching delivery and increased pressures to publish (Beigi et al., 2018). These challenges, together with established flexible work practices, make this setting particularly appropriate in addressing the research questions.

The study coincided with the COVID-19 pandemic. While the introduction of ICTs has caused considerable changes within both academic and non-academic professions in terms of how, where and when work can be performed, these changes had up to 2020 never been globally enforced. The necessary enforcement of remote working at the outset of the pandemic effectively removed the choice to work anywhere other than at home, creating a unique set of circumstances for the participants and organisation in this study.

Participants and Procedure

The study draws on data from 14 online semi-structured interviews that were carried out between March and May 2021. During that time, a state-wide lockdown had been imposed owing to a sharp rise in case numbers. The lockdown included schools and universities and was regarded as one of the most restrictive lockdowns in the EU (Pinheiro, 2021). While it would have been preferable to conduct interviews face-to-face, it was not possible due to COVID-19 restrictions. However, remote technologies such as Zoom have been widely and effectively used to collect qualitative data during COVID-19 (Torrentira, 2020). The interviews allowed for flexibility and focus and were supported by an interview schedule to ensure efficiency, transparency and dependability (Turner, 2010).

In the interest of consistency and integrity, the interview schedule drew on themes arising from the literature review (Turner, 2010) and enabled comparison across participants. Interviews began with an open question about the participant's job at the university to obtain a

sense of their work history and responsibilities. Subsequently, structured, open questions served as a springboard for discussion and as appropriate, unstructured, probing questions were used intermittently to encourage participants to elaborate on their answers and to permit open-ended reflection. Questions related to autonomy, work/life boundaries and boundary management behaviours, work-related ICT use, perceived benefits and disadvantages of ICT use in terms of work-life balance and recovery. The interviews lasted between 30 and 60 minutes each, with an average length of 46 minutes. Participants were recruited based on them being a parent, with their child/ children ranging in age from new-born to 18 years old. Gender balance was achieved with seven female and seven male participants. All participants were business school faculty. A summary of the sample profile is provided in Table 1.

Table 1 Summary of Participant Profile

Participant ID	Gender	Level	# Children
P1	F	Senior Lecturer	2
P2	M	Lecturer	1
P3	F	Lecturer	1
P4	M	Associate Professor	2
P5	F	Associate Professor	3
P6	M	Associate Professor	1
P7	F	Senior Lecturer	2
P8	M	Lecturer	2
P9	F	Lecturer	4
P10	M	Senior Lecturer	2

P11	F	Lecturer	3
P12	M	Lecturer	3
P13	F	Associate Professor	2
P14	M	Lecturer	2

Data Analysis

Braun and Clarke's (2006) thematic analysis (TA) methodology was used to analyse the data. Interview recordings were transcribed verbatim and were reviewed several times to ensure accuracy and immersion in the data. First, three major themes were identified (conflict, enrichment and boundary management). Then broad categories of preliminary codes were identified and then the entire data set was reviewed again. These preliminary codes reflect the detail that is included in Figure 1 below. Subsequently, the data was rearranged according to these preliminary codes. Where data was deemed irrelevant it was either removed, assigned to an appropriate existing code or a new code was generated. Codes were further reviewed and integrated where relationships of interest were found. Each code was detailed on a card and representative data to support it was assigned to it. The cards were arranged and rearranged in an iterative fashion until a clear, robust understanding of how the codes linked together was obtained. This involved identifying six larger sub-themes - two for each major theme - under which the preliminary codes could be fitted (see Figure 1). This approach of reorganising, reflecting and synthesising information is useful in managing and analysing qualitative data (Collis and Hussey, 2014) and formed the basis of the themes identified. To ensure accuracy, the data was reviewed again to confirm that the themes identified were representative of the data collected.

FINDINGS

Linking work-related ICT use to WFC during the COVID-19 pandemic

The first research question set out to explore whether work-related ICT use contributed to WFC during the COVID-19 pandemic. The analysis of the data identified two broad themes with regard to the factors contributing to WFC. These were: (1) ICTs, work intensification/extensification patterns and WFC; and (2) Technostress, WFC and ubiquitous ICTs. Each theme is addressed separately below.

ICTs, work intensification/extensification and WFC

Participants acknowledged that even prior to COVID-19, their work schedule was characterised by fluctuating patterns of work intensification, which extended their working day/week. Some of these factors have long been associated with academic work and are largely beyond an academic's control, being dictated by teaching timetables or deadlines for examination papers and grades: *'You would hear reference to a treadmill…you're on it. The lectures have to get done; the exam papers have to get in.*' (P12, M/L), '*When you have exams coming in, assignments coming in ... that completely threw out your workload.*' (P2, M/L), and *'in the coming five weeks, I'll probably be marking throughout the weekend…because of the tight turnaround.*' (P5, F/AP). However, there was a general sense that this was an expected part of academic life and that work *'extended into the weekends'* (P6, M/AP), '*there are definitely no fixed hours'* (P7, F/SL), and '*nine to five is never enough'* (P5, F/AP). Other factors were more controllable, such as self-imposed research deadlines, though externally imposed deadlines predominantly related to teaching took precedence.

Our findings suggest that three specific factors drove work intensification during COVID-19, which intensified and extended an already stretched work schedule. These were: increased teaching effort and demand for student support; increased administration effort; and work extensification during lockdowns.

Increased teaching effort and demand for student support

Participants observed that at the onset of the pandemic - when programmes switched to remote delivery - their work shifted disproportionately towards teaching and supporting students causing intensification in two ways. Initially, participants experienced a sudden intensification and extensification of work as they had to pivot unexpectedly to online delivery, contributing to a perceived loss of control and a surge in work-related stress. One participant described it as: *'the terror of having no control over teaching when it was all moving online and…the fear of how the hell you actually teach online'* (P10, M/SL), while another stated: *'it was teach, teach, teach, just keep up with teaching'* (P13, F/AP). This was followed by a sustained sense of work intensification and a perception that teaching online had increased workload: '*Online lecturing has created more work … I have done just as much, if not more work'* (P12, M/L). There was also a view that students needed additional support: '*I felt teaching online I had to explain things more often, in more different ways, have more one-on-one meetings to get the same point across'* (P13, F/AP). In addition, participants felt they had to work differently which was a source of fatigue: '*… looking at the screen the whole time… I think that's one of the challenges, where you really feel fatigue…I have to mark everything now online as well…and students, especially now, are requesting a lot of extensions so that means everything gets pushed out further and everything becomes tighter in the end'* (P5, F/AP).

Increased administration effort

Participants noticed a sharp increase in administration, particularly regarding the number of scheduled online meetings and emails: '*There have been so many more meetings this year'* (P9, F/L). For programme chairpersons, this effort increased exponentially as students sought greater support during COVID-19, regularly engaging with them via email, often out of hours: *'There was a lot of "what's going to happen to my degree?"... this meant the email was just ludicrous … it basically just runs everything'* (P11, F/L) and another in a similar role reporting

a sense of injustice at the inequitable nature of the role: *'I think if you weren't chairing a programme [during COVID-19], you're getting off scot-free'* (P9, F/L).

Work extensification during lockdowns

Working during COVID-19 was not experienced consistently by all participants, especially during lockdowns when schools/crèches were closed. Some participants with young children had greater childcare responsibilities, with some very poignant accounts of how they coped and how it extended their working day/week: *During the first lockdown there was no hope of me doing anything live because my youngest needed me, so I didn't… all the activities… happened during the evenings and weekends… I was shattered. We were shattered, both of us… it was tense and I could just describe it as like a little hamster wheel. I'm on the whole time, half five in the morning with the lads all day, up the stairs, work, get to the lads, clean the kitchen, get stuff ready to survive the next day, go to bed, get up at half five…there was no end…I can just simply say that we were just on a constant edge of just keep going and not thinking about it. I wasn't in a good place. It was very hard, very hard (P13, F/AP).*

Furthermore, some found they simply couldn't perform their work: '*because you got constantly interrupted…it meant not sitting down until…10 o'clock in the evening to get your own work done'* (P5, F/AP). Others felt torn between both family and work domains and experienced time pressure and feelings of guilt: *Everybody is home and as a mother, the struggle is there...You are competing with your own schedule, your children's schedule, your workload and their timetable…sometimes, I just say, children, I'm sorry, just ignore me. Please do whatever you can do...Sometimes they understand and sometimes their understanding only makes me feel guilty* (P7, F/SL). Pre-existing work intensification/extensification patterns were increased and enabled by work-related ICTs, meaning participants often had less time during the workday, resulting in a perception of less control over their time, an increased workload and a pressurised work schedule.

Technostress, WFC and ubiquitous ICTs

Frequently, participants observed the pressures that ICTs created in their workday: *'it's added an extra layer, maybe things are a little bit over-engineered'* (P12, M/L). Online delivery eliminated opportunities to engage in impromptu conversations before/after class thereby increasing the volume of emails and creating role overload: '*that informal communication is very hard to replicate… all those things require an email and a meeting and that's changed things enormously'* (P1, F/SL). Many experienced a sense of being 'always on' and raised expectations of availability: *'People … scheduling things in your calendar things … there's an assumption that you're available'* (P8, M/L). Some felt that ICTs were enabling work extensification by breaching organisational norms around meeting times: '*It's the always on-ness of it. Nobody thinks twice about putting on a meeting at whatever hour whereas before [COVID-19] … you couldn't start before half nine and you couldn't let it go to beyond half five, whereas now, you're squeezing in an hour and there's slippage on that' (P9, F/L).* One participant felt guilty for not working more: '*There are days when I don't go further than my front garden, spells of days…you find it harder to justify not doing work and go for a walk'* (P10, M/SL).

Interestingly, some of these behaviours existed prior to the pandemic and were likely driven by job autonomy and enabled by ICTs: *'it [autonomy] is the part of the job that allows work to creep into any part of your life, because you can bring your work home'* (P13, F/AP), thus the technological dependence imposed during the pandemic appears to have sustained and exacerbated this behaviour.

Linking work-related ICT use to WFE during the COVID-19 pandemic

The second research question set out to establish whether work-related ICT use contributed to WFE during the pandemic. Our findings identified two themes that influenced WFE during the

pandemic: (1) ICT-enabled flexibility and control; and (2) Valuing ICTs and autonomy. Each of these themes is examined in the following sections.

ICT-enabled flexibility and control

During COVID-19, work-related ICTs generated flexibility in the work domain which enabled performance in the family domain contributing to WFE. Several participants already worked from home at least one day per week pre-COVID-19, but the way flexibility enriched participants' lives during the pandemic is varied and noteworthy. Some commented on how flexibility provided them with a better sense of control and use of their time: *'I've taken that [commuting] time back … that's bonus time now for me'* (P2, M/L), *'I'm now taking that [commuting] time with my son, rather than in a car battling the M50 … I'm still getting the same work done, probably more, in fact, because I don't now have this commute where I can't do anything because everything we do is manageable online'* (P6, M/AP). Participants also reported that they had increased control over their time and work schedule: *'I actually have found that…I'm more in control of my diary…because you're able to schedule things via Zoom'* (P14, M/L), giving them *'flexibility in terms of when you want to log in, and when you want to do your work'* (P2, M/L). It also improved their availability for family commitments and their sense of quality of life: *'You can probably start earlier, you can kind of adapt around the actual school run in the morning'* (P14, M/L), *'I would feel that I have a better quality of life now because of the fact that I don't have to commute'* (P6, M/AP). In a practical way, ICTs freed up participants' time in terms of being able to opt for pre-recorded lectures: *'I set it up as asynchronous [it] … paved the flexibility, so it was kind of pre-managed'* (P4, M/AP). Not only did ICTs positively influence perceptions of time, they also empowered some participants in the way they managed their work pace and workload: '*It's the mobility of it…I can reply on my phone to an email then it's done … I can multitask'* (P13, F/AP) with some already acknowledging how this will benefit them in the future if/when they have to miss lectures: *'that*

problem won't stress me out anymore, because I'd be able to either do a live lecture on Zoom or I'll pre-record it' (P11, F/L).

Valuing ICTs and autonomy during COVID-19

The value of job autonomy to this cohort of workers cannot be underestimated: *'Autonomy is one of the reasons why I chose this job'* (P5, F/AP), and *'is one of the reasons I do love my job'* (P13, F/AP). Despite indications that autonomy was constrained to some extent during COVID-19, a level of autonomy supported by ICTs remained, adding to positive outcomes for families by providing them with a sense of control and stability. Some participants observed how autonomy helped alleviate feelings of parental guilt and enabled them to plan to disconnect: *'I am just so grateful ... for the job we have. Working in the evening, I can feel guilty, but at least tomorrow I don't have meetings, I've no teaching. I can rest a bit, I can spend more time with them [my children]'* (P7, F/SL). Others believe that the pandemic has underlined the autonomous nature of the job ensuring a positive attitude towards their job and employer as it required employers to trust them to perform their jobs: *'I've actually found it [the pandemic] kind of highlighted it [job autonomy] ... I found I could go my own way, finding out what works best'* (P8, M/L), *'I think it [autonomy] makes things a lot easier given the situation that we're in at the moment. I think the university trusts its staff to deliver'* (P5, F/AP).

Work-related ICT use and boundary management behaviours during COVID-19

Research question three considered whether and how boundary management preference influenced the impact of work-related ICT use on the work/life interface during COVID-19. It considers two themes that emerged from the data: (1) how ICT's and (2) WFH influenced boundary management during COVID-19. Prior to exploring these themes, it is helpful to remember the distinction between boundary management preference and enactment.

Essentially, boundary management preferences may not always be enacted, which in turn will influence whether /how work-related ICTs will impact the work/life interface.

ICT influence on boundary management during COVID-19

The pervasiveness of ICTs during COVID-19 presented opportunities and challenges for participants when it came to enacting their boundary management preference. Some employed specific tactics to create and maintain boundaries between work/life domains such as: *'closing down your laptop, closing down the browser and making sure that you're not checking things'* (P2, M/L). Others chose to change habits: *'When this first kicked off…I spent my life on this thing [phone]…then I made a series of new year's resolutions…one of them was…I'm no longer doing emails on my phone…that was a game changer for me'* (P11, F/L). This would suggest these participants preferred a clear boundary between the two domains and actively sought to separate them.

However, some efforts were not always effective when it came to preventing blurred boundaries particularly regarding mobile email: '*I have switched off the notifications for email on my phone, but I still check them regularly…I do that when the kids are there, when I'm making dinner'* (P1, F/SL). Notably, the reasons for checking email are varied and complex and are often accompanied by self-deprecating comments acknowledging responsibility for their behaviour but it was a trade-off they were willing to make to help manage their workload: *It's [smartphone] not good for up here in my head, for my stress. It's not good for mental health…but for me it helps me keep up. It's not as easy to pull up the laptop and turn it on and open up all the apps and whatnot whereas, I can pick this up if the lads get attracted to some toy for five minutes. I can say, there's another email sorted…I am lethal with the phone…It's the first thing I check in the morning when I wake up, it's the last thing I check at night* (P13, F/AP).

For some, checking email outside of work hours helped to deal with actual and expected email volume, but again this was prefaced with a sense of responsibility or guilt: *'it's my own fault really … [I] go back to things, maybe around eight or nine o'clock at night time just to clear down emails. I'm one of those idiots that has emails coming into my phone'* (P12, M/L), noticeable particularly at certain times, *'close to submission time … you just knew emails were coming. So on Monday with a very heavy heart you know there's all those emails'* (P7, F/SL). These sort of emotional responses highlight the salience of email in participants' working lives: *'you see an email that needs an answer. Once you've seen it, you can't unsee it'* (P1, F/SL), coupled with a sense of foreboding about the implications an email might bring and dealing with that by checking it out of hours: *I find there's a huge amount of anxiety attached to email, because sometimes I say God if I'm not checking it I'm almost as anxious about what's in there. I say what monster is in there if I'm not checking it…It's almost easier to check it on a Saturday and know that there's no monsters in there* (P11, F/L).

In terms of constant connectivity, again there was a sense of responsibility attached to participants' behaviours: *'It's the always on-ness that I suppose is the most difficult to manage…part of that is obviously on me not being disciplined enough to just stop at five o'clock or whatever'* (P9, F/L), which ultimately hinders participants' attempts to disconnect physically: '*The challenge for me more so, is switching off…if you have your laptop, for example, on your desk in the bedroom…you're very tempted to check your emails again in the evening time'* (P5, F/AP) and mentally: *'It's hard … you can physically switch off by not touching your laptop but it's very, very hard to switch off mentally'* (P7, F/SL), despite concerted efforts: *'I try to do all the things you're meant to do but I just find there's more this year…I just feel I'm constantly on'* (P9, F/L).

WFH influence on boundary management during COVID-19

The physical presence of the workplace in the home imposed by COVID-19 restrictions and enabled by ICTs presented an immediate constraint on boundary management preferences actually being enacted. Some participants preferred to create and maintain boundaries between their work and personal lives and were able to do so using a separate space within their home: '*I have a dedicated office in my house. This is where I come to work'* (P2, M/L), *'I try to have a room for work and if I'm outside of that room I don't bring my stuff with me'* (P8, M/L). Despite this, even those with a separate space found it challenging to maintain that degree of separation due to childcare responsibilities during lockdowns and having to share space: *I found during the height of COVID when I didn't have childcare, I was basically working in the kitchen and my husband was out here [shed]. I found that horrendous because I felt like I was constantly at work because the computer was on the table and the kids were having their dinner beside it or the kids were on my lap when I was working* (P11, F/L).

Others did not have any choice in terms of boundary creation/maintenance leading to permeable, flexible boundaries prone to interruption and temporal blurring and extension of their workday to when children were in bed during lockdown: *'now I work more at night-time … We don't have two office spaces … I'm sitting at the kitchen table now, which is the same place that I sit to have my dinner or lunch … The laptop follows me around, there's chargers in every room'* (P1, F/SL). This lack of separation contributed to a sense of being pulled between the two domains with some female participants almost pretending to be an employee while attending to childcare responsibilities: *'I've had meetings while the kids are plaiting my hair and I turn off my camera because I'm cooking dinner'* (P1, F/SL), *'I attended a group meeting or department meeting during first lockdown with my laptop on mute and the camera off in the bathroom changing my child's nappy'* (P13, F/AP). This inability to create/maintain boundaries led to confusion around role salience and a sense of dual commitment for some participants. For some, a separate office space enabled a greater sense

of closure and boundary crossing at the end of a workday: *'I will leave the office and close the door and physically now there's a disjoint between them'* (P6, M/AP), *'It's great [shed] and the boundary that it creates in terms of finishing and starting is huge.'* (P11, F/L)

In addition to temporal/physical blurring, participants found that because their workplace was in their home, opportunities to transition between roles were removed: '*I always found the commute really useful…I'd drop the kids off in the morning and then the 30/ 40 minutes that it took for me to drive from the school to work, you almost felt like you were detaching I guess a bit from being a mum…there's no sense of that anymore' (*P1, F/SL). Another participant suggested that it helped divide their work and personal lives: *'it [the commute] did put a kind of a bit distance between where you worked and home'* (P12, M/L).

DISCUSSION

This study explored whether or how work-related ICT use by academics in an Irish university positively and/or negatively affected work and life priorities during the COVID-19 pandemic. Additionally, it examined how participants managed the consequences of ICT use while remote working and how their reactions impacted the work/life interface. The literature pertaining to the interplay between ICTs, WFC and WFE is still emergent and many studies often only look at either WFC or WFE and ICTs, with mixed results (Vaziri et al., 2020). A key contribution of this study is that it looks at both WFC and WFE together in a single study and produces equally complex results. While the findings highlight the importance of autonomy in reducing WFC, it is the importance of autonomy to carve out time for enrichment in the life domain that represents this study's key contribution to knowledge.

The findings suggest that work-related ICT use resulted in differential consequences contributing to varying levels of both WFC and WFE. This concurs with research that highlights the paradoxical outcomes of using work-related ICTs (e.g. Mazmanian et al., 2013; Ter Hoeven et al., 2016). Moreover, the study found that the role of work-related ICTs in

managing work-life boundaries is an important, yet complex process and one that is dependent on multiple factors including behaviours, preferences and resources to enact these preferences. This finding supports prior research highlighting the importance of managing work-life boundaries in the digital age (e.g. Kossek et al., 2012; Kossek, 2016). Overall, this contributes to knowledge on the differential consequences of technology and to the very current conversation around how to adapt in a post-COVID-19 world.

With regard to WFC, the findings show that the shift to mostly ICT-enabled work during COVID-19 triggered a series of negative outcomes. This provides support for the different types of WFC (time, strain and behaviour-based conflict) posited by Greenhaus and Beutell (1985). Time-based conflict was evident as work intensification led to work extensification, corroborating prior findings about remote working (Kelliher and Anderson, 2010) and specifically among academics' experiences of WFH (Adisa et al., 2017; Currie and Eveline, 2011). Additionally, change in the nature of work resulted in fatigue, a symptom of strain-based WFC. Notably, work stressors were the primary sources of these types of WFC through a disproportionate shift in focus to online teaching/administration effort and the requirement for increased student support. Symptoms of behaviour-based WFC (Greenhaus and Beutell, 1985) were also evident, including feelings of guilt and a sense of being pulled between domains. By contrast, family stressors were the source of this type of conflict as WFH enabled more interruptions from children necessitating extended working hours to counteract time lost (time-based WFC), thus confirming Greenhaus and Beutell's (1985) assertion that strain produced in one role can create conflict in another.

The findings show that the pervasiveness of work-related ICTs during COVID-19 generated a sense of being 'always on', mirroring the findings of previous studies (Mazmanian et al., 2013; McDowall and Kinman, 2017), including those undertaken in academia (Heijstra and Rafnsdottir, 2010; Potter et al., 2022). Furthermore, participants believed that their

workload increased during COVID-19, which was most likely due to ICTs. This supports previous findings which associated work-related ICTs with increased workload (Chesley, 2014; Ter Hoeven et al., 2016), a symptom of technostress (Tarafdar et al., 2007). Specifically, email volume increased dramatically confirming research linking increased engagement with email to a greater sense of overload (Barley et al., 2011). This finding extends the literature on the negative effects of email in the workplace which is still emergent (Steffensen et al., 2021) to the context of academia, where the increased salience of email has become a source of time pressure (Potter et al., 2022). In our study this was associated with increased WFC in that participants found themselves caught in a vicious circle of ICT-enabled work resulting in increased workload, which extended working hours thus reinforcing a sense of being 'always on'. Consequently, participants experienced time-based and strain-based WFC through interaction fatigue (Greenhaus and Beutell, 1985). Of particular interest are the findings that hint at a breach of organisational norms around meeting times. Although this was not a core theme in the study, it echoes the connection between changed expectations of availability and shifting norms identified by Mazmanian et al. (2013) in their study of ICTs and mobile email. Relatedly, the finding regarding a sense of guilt for not working more while at home also suggests an awareness of a possible change in work expectations during this time.

With regard to WFE, the findings substantiated the instrumental mechanism in Greenhaus and Powell's (2006) model which enables a resource to be transferred directly from one role to enhance the performance in the other role; in the case of these findings by improving participants' availability to tend to family commitments. This is consistent with prior research suggesting that ICTs enable participants to WFH at a time convenient to both domains. Temporal and physical flexibility enabled by technology is identified as a key positive outcome of ICTs (Mazmanian et al., 2013; Middleton and Cukier, 2006), although it is not explicitly framed as WFE. This flexibility was a clearly salient aspect of WFE in the study. Firstly,

flexibility generated in one role (work) directly promoted better performance in the other role (home) as the home role was highly salient during COVID-19. Secondly, there was evidence that flexibility was perceived as having greater relevance during this time as it enabled role expectations to be met. Finally, flexibility as a resource was regarded as compatible with the demands of the home role during COVID-19.

In the context of academia, this study extends the literature on positive consequences of ICT-enabled flexibility among academics with children (Currie and Eveline, 2011; Heijstra and Rafnsdottir, 2010). It shows how ICTs empowered participants further by revealing the benefit of technology as a resource for future temporal/physical flexibility e.g. using asynchronous lectures. This finding is noteworthy as this resource existed prior to COVID-19 but it suggests that the requirement to engage with ICTs in new ways normalised it for participants, increasing their perception of the temporal/physical flexibility that technology can provide. Additionally, the study demonstrated that ICTs provided a greater sense of time control for some, which is in line with similar studies that found that ICT-use was associated with productivity gains (Chesley, 2014), and increased interaction control (Mazmanian et al., 2013). Importantly, this suggests that if used properly, technology is potentially controllable, rather than controlling. The findings showed that ICT-enabled flexibility helped to maintain and enhance participants' perception of autonomy during COVID-19 providing positive outcomes and contributing to WFE. This provides support for the notion of 'personal autonomy' (Cousins and Robey, 2015; Mazmanian et al., 2013), as ICTs enabled individuals to work anywhere at any time leaving them free to tend to work/family commitments.

Finally, regarding boundary management, the enforcement of WFH imposed by COVID-19 restrictions presented an immediate constraint on the enactment of boundary management preferences shaping personal outcomes for the work/ life interface. The study showed evidence of segmentation/separation behaviours as identified in the literature

(Ashforth et al., 2000; Kossek et al., 2012), for example, in the way some participants employed ICTs and/or a separate home office to create and maintain temporal/physical boundaries between their work-home lives. Participants regarded this behaviour positively and indicated a greater sense of boundary control as posited by Kossek (2016), contributing to positive perceptions of the balance between work and life priorities. Conversely, though the study demonstrated integration behaviours as identified in the literature (Ashforth et al., 2000; Kossek et al., 2012), the fact that this was not often by choice negatively influenced perceived boundary control and consequently outcomes for WLB. The findings regarding integration corroborate research in the context of academia that attributes blurred boundaries leading to negative perceptions of WLB (Adisa et al., 2017; Eveline and Currie, 2011).

Some participants sabotaged their own efforts to create/maintain boundaries through continuous checking of emails resulting in a 'cycle of responsiveness' as theorised by Perlow (2012, p.6) and subsequent 'escalating engagement' with work emails (Mazmanian et al., 2013, p. 1345), demonstrating support for the relationship between constant connectivity and this type of behaviour. These findings validate research associating work-related ICTs to compulsive checking behaviours (Jarvenpaa and Lang, 2005; Ter Hoeven et al., 2016), ultimately blurring temporal/physical boundaries between work and home and leading to lower boundary control which negatively impacted their perception of WLB.

The increased salience of email highlighted earlier as a driver of work intensification is worth re-examining in the context of boundary management. Similar to research identifying email as a source of stress (Barley et al., 2011) and a trigger for emotional responses (Butts et al., 2015), our findings expose the powerful, stressful influence of email in participants' lives and how it can contribute to negative mood spillover. Of note, is the related finding that somehow negative outcomes from email engagement were the participants' fault. This is less noticeable in the literature but provides tentative support for the research by Mazmanian et al.

(2013), who found that mobile device users rationalised their compulsive behaviours regarding mobile email and never blamed the technology itself. These findings are important as they extend the literature and indicate a need for further exploration, particularly as the salience of email in the context of academia is a well-established feature of work, which is unlikely to disappear (Steffensen et al., 2021).

Our findings regarding participants' efforts to disconnect are similar to findings from research associating ICTs with difficulties disconnecting and recovering (Barber and Jenkins, 2014; Fenner and Renn, 2010), suggesting a lack of psychological boundary control (Kossek, 2016; Kossek et al., 2012). However, this may not have been purely as a direct result of ICTs as the pre-existing drivers of work intensification/extensification noted in the study contributed to less available recovery time in any case.

The study found that the ubiquity of ICTs and enforced WFH eliminated opportunities to transition adequately from one role to another, a process identified by Ashforth et al. (2000). Notably, this contributed to boundary blurring and reduced perception of boundary control among participants as observed by Kossek (2016), who argues that transition time provides positive boundary management outcomes. Moreover, participants displayed symptoms of behaviour-based WFC as identified by Grenhaus and Beutell (1985) as some experienced difficulty complying with role expectations while WFH. In particular, some female participants experienced confusion around role salience and a sense of dual commitment as identified in the boundary management literature (Ashforth et al., 2000) arising from their secretive behaviours (e.g., nappy changing, hair braiding) in a bid to comply with work-role expectations. This endorses Murphy's (2021) view that remote work has the potential to increase WFC because boundaries are particularly blurred for women. Furthermore, our findings show participants being torn between domains and unable to assert more salient work/family identity centralities, reflecting research which suggests that interruption

behaviours are often related to identity salience and boundary control perceptions (Kossek et al., 2012). This also confirms the claim by Ashforth et al. (2000) that higher role integration complicates boundary creation/maintenance. A summary of the main findings from the study are presented in Figure 1.

INSERT FIGURE 1 HERE

Limitations and suggestions for future research

While the findings shed much light on the impact of ICT enabled technologies on outcomes relevant to WLB, several limitations should be noted. First, our study focused only on academics who were parents. Our rationale for their inclusion was quite deliberate as - consistent with other prior research (e.g., Currie and Eveline, 2011; Heijstra and Rafnsdottir, 2010) - we were interested in the work-family interface. However, this potentially limits the generalisability of our findings to the wider academic population or for those with other caring responsibilities (e.g. eldercare). More generally, our findings are context-specific and lack generalisability to a wider population or workforce. Thus, future research should consider the issues explored in the study across a wider range of contexts. Second, some participants referenced the COVID-19 pandemic in terms of their initial as well as their subsequent experiences, which span the period March 2020 through to May 2021. These initial experiences of the pandemic were retrospective and so may not be entirely accurate. Future studies should consider a longitudinal approach which would capture these experiences more accurately. Finally, the multifaceted findings of the study are a reminder of how difficult it can be to understand the personal, intricate aspects of work-family realities through clear-cut dichotomous terms like WFC/WFE. Nonetheless, we were satisfied that these constructs together with boundary management provided the most suitable lenses through which the research questions could be explored.

More generally, future research should investigate employees' and organisations' experiences of remote working to understand how flexible working can be successfully embedded to enhance worker well-being. For example, the complexity of the interplay between control/ autonomy and boundary management and, in particular, whether or how the experience of the pandemic shaped employees' attitudes and future intentions regarding flexible working would be worthwhile. This would provide important insights regarding the strength and/or permeability of work-life boundaries. In addition, research examining models such as that proposed by Guest (2017) which identifies a range of work design and other infrastructural supports that can influence performance via employee well-being are worth considering. Such a focus could identify the infrastructural and psychological needs that could inform the establishment of sustainable and effective flexible work models. **Implications for practice**

While WFH was thrust on organisations and individuals at the outset of the pandemic, a more strategic and evidence-led approach is now required. To this end, there are a number of practical implications arising from the study. Firstly, in the context of academia, the findings underscore the relentless demands placed on academics to perform effectively and the complex ways that these demands influence academics' lives. This is unrelated to COVID-19, but is related to the increasing complexity of academics' work as observed in the literature (Beigi et al., 2018) and is thus relevant to future work/workplace conversations. It is thus important not to lose sight of the changing nature of academic work *in addition to* the role of technology in efforts to build better balance into academic workloads. The findings highlighted that flexible working opportunities had a number of positive influences on family life such as being able to spend more time with children, engage in school runs and exercise control in trading longer work hours on one day with additional time off the next. This suggests that academic institutions, in their return to campus based activities, need to ensure that such flexibility can be maintained through hybrid working opportunities. However, the findings also highlight the

stress and heightened vulnerabilities among some individuals while working from home. This was perhaps particularly so for those with more pronounced preferences for segmentation. Thus, a 'one size fits all' approach to flexible working will not be practical and individual differences and preferences will need to be considered. In the same way that WLB means different things to different people (Kossek, 2016), remote working too can take many forms and needs careful planning and management to be both effective and sustainable. In particular, communication and employee support infrastructures including self-care when WFH will require careful consideration in order to maintain employee well-being. The development of skills to facilitate engagement in 'deep' work (Newport, 2016) is one example of a strategy to enable employees to cope with the demands and distractions brought on by increased ICT use.

Secondly, engaging with ICTs during COVID-19 has potentially shifted organisational norms and redefined appropriate communication practices around expectations of availability or of blended learning provision, suggesting broader implications for what it means to be an effective academic. This not only concerns academics' preferences with regard to learning delivery, but also learner preferences and expectations. In considering the university of the future, stakeholders need to thoroughly investigate future preferences and needs across all three academic areas of research, teaching and administration/service. While many aspects of research and administration were arguably 'doable' remotely prior to the pandemic, now it can be argued that all three elements of an academic's work can function effectively in virtual settings. This suggests that academic institutions may consider international recruitment campaigns that allow for such virtual work opportunities and that allow for top talent to be sourced. Finally, practical changes arising from WFH during COVID-19 are already apparent with evidence of recent infrastructural investment to support WFH. In an Irish context this includes the launch of the *National Hubs Network* (2021) and government policy changes like the *National Remote Work Strategy* (2021) and the *Code of Practice on the Right to Disconnect*

(2021). The effects of these changes have yet to be fully realised but they have the potential to have far-reaching consequences for employees and organisations alike.

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References

Adisa, T. A., Gbadamosi, G., and Osabutey, E. L. (2017). What happened to the border? The role of mobile information technology devices on employees' work-life balance. *Personnel Review, 46*(8), 1651–1671.

Adisa, T.A., Antonacopoulou, E., Beauregard, T.A., Dickmann, M. and Adekoya, O.D., 2022. Exploring the impact of COVID-19 on employees' boundary management and work–life balance. *British Journal of Management*, *33*(4), 1694-1709.

Ashforth, B. E., Kreiner, G. E., and Fugate, M. (2000). All in a day's work: Boundaries and micro role transitions. *Academy of Management Review*, *25*(3), 472-491.

Barber, L. K., and Jenkins, J. S. (2014). Creating technological boundaries to protect bedtime: Examining work–home boundary management, psychological detachment and sleep. *Stress and Health*, *30*(3), 259-264.

Barley, S. R., Meyerson, D. E., and Grodal, S. (2011). E-mail as a source and symbol of stress. *Organization Science, 22*(4), 887-906.

Beauregard, T. A., Basile, K. A. and Canónico, E. (2019). Telework: outcomes and facilitators for employees. In R. N. Landers (ed.), *The Cambridge Handbook of Technology and Employee Behavior*, pp. 511–543. Cambridge: Cambridge University Press.

Beigi, M., Shirmohammadi, M., and Stewart, J. (2018). Flexible work arrangements and work–family conflict: A metasynthesis of qualitative studies among academics. *Human Resource Development Review, 17*(3), 314-336.

Braun, V., and Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Butts, M. M., Becker, W. J., and Boswell, W. R. (2015). Hot buttons and time sinks: The effects of electronic communication during nonwork time on emotions and work-nonwork conflict. *Academy of Management Journal, 58*(3), 763-788.

Chesley, N. (2014). Information and communication technology use, work intensification and employee strain and distress. *Work, Employment and Society, 28*(4), 589-610.

Collis, J., and Hussey, R. (2014). *Business Research: A practical guide for undergraduate* (4th Ed.). London: MacMillan International.

Cousins, K. and Robey, D. (2015). Managing work-life boundaries with mobile technologies. *Information Technology & People, 28*(1): 34-71.

Currie, J., and Eveline, J. (2011). E-technology and work/life balance for academics with young children. *Higher Education, 62*(4), 533-550.

Derks, D. and Bakker, A. B. (2014). Smartphone use, work–home interference, and burnout: A diary study on the role of recovery. *Applied Psychology, 63*(3), 411-440.

Derks, D., Bakker, A.B., Peters, P. and van Wingerden, P. (2016). Work-related smartphone use, work–family conflict and family role performance: The role of segmentation preference. *Human relations, 69*(5), 1045-1068.

Engel, G. V. (1970). Professional autonomy and bureaucratic organization. *Administrative Science Quarterly, 15*(1): 12-21.

Fein, E. C., Skinner, N. and Machin, M. A. (2017). Work intensification, work–life interference, stress, and well-being in Australian workers. *International Studies of Management & Organization, 47*(4), 360-371.

Fenner, G. H. and Renn, R. W. (2010). Technology-assisted supplemental work and work-to-family conflict: The role of instrumentality beliefs, organizational expectations and time management. *Human Relations, 63*(1), 63-82.

Fernback, J. (2018). Academic/digital work: ICTs, knowledge capital, and the question of educational quality. *Triple C*, 16(1), 143-158.

Field, J. C. and Chan, X. W. (2018). Contemporary knowledge workers and the boundaryless work–life interface: Implications for the human resource management of the knowledge workforce. *Frontiers in Psychology, 9*, 2414.

Gadeyne, N., Verbruggen, M., Delanoeije, J., and De Cooman, R. (2018). All wired, all tired? Work-related ICT-use outside work hours and work-to-home conflict: The role of integration preference, integration norms and work demands. *Journal of Vocational Behavior, 107*, 86-99.

Gombert, L., Konze, A., Rivkin, W. and Schmidt, K. (2018). Protect your sleep when work is calling: How work-related smartphone use during non-work time and sleep quality impact next-day self-control processes at work. *International Journal of Environmental Research and Public Health, 15*(8), 1757.

Greenhaus, J. H., and Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review, 10*(1), 76-88.

Greenhaus, J.H. and Powell, G.N. (2006). When work and family are allies: A theory of work-family enrichment. *Academy of Management Review,* 31(1), 72-92.

Guest, D. E. (2017). Human resource management and employee well-being: Towards a new analytic framework. *Human Resource Management Journal*, 27(1), 22-38.

Hanson, G. C., Hammer, L. B. and Colton, C. L. (2006). Development and validation of a multidimensional scale of perceived work-family positive spillover. *Journal of Occupational Health Psychology, 11*(3), 249.

Heiden, M., Widar, L., Wiitavaara, B. and Boman, E. (2021). Telework in academia: associations with health and well-being among staff. *Higher Education*, 81, 707-722.

Heijstra, T. M., and Rafnsdottir, G. L. (2010). The internet and academics' workload and work–family balance. *The Internet and Higher Education, 13*(3), 158-163.

Hunter, E. M., Clark, M. A. and Carlson, D. S. (2019). Violating work-family boundaries: Reactions to interruptions at work and home. *Journal of Management, 45*(3), 1284-1308.

Jarvenpaa, S. L., and Lang, K. R. (2005). Managing the paradoxes of mobile technology. *Information Systems Management, 22*(4), 7-23.

Kelliher, C., and Anderson, D. (2010). Doing more with less? Flexible working practices and the intensification of work. *Human Relations, 63*(1), 83-106.

Kossek, E. E. and Ozeki, C. (1998). Work–family conflict, policies, and the job–life satisfaction relationship: A review and directions for organizational behaviour–human resources research. *Journal of Applied Psychology*, 83(2), 139.

Kossek, E. E., and Lautsch, B. A. (2012). Work–family boundary management styles in organizations: A cross-level model. *Organizational Psychology Review*, 2(2), 152-171.

Kossek, E. E., Ruderman, M. N., Braddy, P. W. and Hannum, K. M. (2012). Work–nonwork boundary management profiles: A person-centred approach. *Journal of Vocational Behavior*, 81(1), 112-128.

Kossek, E. E. (2016). Managing work-life boundaries in the digital age. *Organizational Dynamics, 45*(3), 258-270.

Kossek, E. E., Perrigino, M., and Rock, A. G. (2020). From ideal workers to ideal work for all: A 50-year review integrating careers and work-family research with a future research agenda. *Journal of Vocational Behavior,126,* 103504.

Kraimer, M. L., Greco, L., Seibert, S. E. and Sargent, L. D. (2019). An investigation of academic career success: The new tempo of academic life. *Academy of Management Learning & Education*, 18(2), 128–152.

Kreiner, G. E., Hollensbe, E. C. and Sheep, M. L. (2009). Balancing borders and bridges: Negotiating the work-home interface via boundary work tactics. *Academy of Management Journal, 52*(4), 704-730.

Mazmanian, M., Orlikowski, W. J., and Yates, J. (2013). The autonomy paradox: The implications of mobile email devices for knowledge professionals. *Organization Science, 24*(5), 1337-1357.

Menzies, H. and Newson, J. (2008). Time, stress and intellectual engagement in academic work: Exploring gender difference. *Gender, Work & Organization, 15*(5), 504-522.

Middleton, C. A., and Cukier, W. (2006). Is mobile email functional or dysfunctional? Two perspectives on mobile email usage. *European Journal of Information Systems, 15*(3), 252-260.

Murphy, K. (2021). Life after COVID-19: What if we never go back to the office? *Irish Journal of Management, 40*(2), 78-85.

McDowall, A., and Kinman, G. (2017). The new nowhere land? A research and practice agenda for the 'always on' culture. *Journal of Organizational Effectiveness: People and Performance, 4*(3), 256-266.

McNall, L. A., Masuda, A. D. and Nicklin, J. M. (2009). Flexible work arrangements, job satisfaction, and turnover intentions: The mediating role of work-to-family enrichment. *The Journal of Psychology, 144*(1), 61-81.

McNall, L. A., Nicklin, J. M. and Masuda, A. D. (2010). A meta-analytic review of the consequences associated with work–family enrichment. *Journal of Business and Psychology, 25*(3), 381-396.

Newport, C. (2016). *Deep Work: Rules for Focused Success in a Distracted World.* Hachette UK.

Nippert-Eng, C. (1996). Calendars and keys: The classification of 'home' and 'work'. Paper presented at the *Sociological Forum, 11*(3), 563-582.

Perlow, L. A. (2012). *Sleeping with your smartphone: How to break the 24/7 habit and change the way you work.* Massachusetts: Harvard Business Press.

Pinheiro, V. (2021). COVID-19 government response measures: analysis in the European Union. *European Journal of Public Health*, 31, Issue Supplement 3.

Potter, R.E., Zadow, A., Dollard, M., Pignata, S. and Lushington, K. (2022). Digital communication, health & wellbeing in universities: a double-edged sword. Journal of Higher Education Policy and Management, *44*(1), .72-89.

Rothbard, N. P., and Ollier-Malaterre, A. (2016). Boundary Management. In: T.D. Allen and Eby, L.T. *The Oxford Handbook of Work and Family*. New York: Oxford University Press, 109-122.

Schlachter, S., McDowall, A., Cropley, M., and Inceoglu, I. (2018). Voluntary work-related technology use during non-work time: A narrative synthesis of empirical research and research agenda. *International Journal of Management Reviews, 20*(4), 825-846.

Steffensen, D. S., McAllister, C. P., Perrewé, P. L., Wang, G., and Brooks, C. D. (2021). 'You've got mail': A daily investigation of email demands on job tension and work-family conflict. *Journal of Business and Psychology, 37*, 325-338.

Tarafdar, M., Tu, Q., Ragu-Nathan, B. S., and Ragu-Nathan, T. S. (2007). The impact of technostress on role stress and productivity. *Journal of Management Information Systems, 24*(1), 301-328.

Ter Hoeven, C. L., van Zoonen, W., and Fonner, K. L. (2016). The practical paradox of technology: The influence of communication technology use on employee burnout and engagement. *Communication Monographs, 83*(2), 239-263.

Tokareva, E., Malysheva, O., Smirnova, Y., and Orchakova, L. (2021). Predictors of the use of ICTS in higher education: Relevance and readiness of universities for their

implementation. *International Journal Of Emerging Technologies In Learning*, 16(14), 166-183.

Torrentira Moises Jr, C. (2020). Online data collection as adaptation in conducting quantitative and qualitative research during the COVID-19 pandemic. *European Journal of Education Studies, 7*(11), 78-87.

Turner III, D. W. (2010). Qualitative interview design: A practical guide for novice investigators. *The Qualitative Report, 15*(3), 754-760.

Vaziri, H., Casper, W. J., Wayne, J. H. and Matthews, R. A. (2020). Changes to the work–family interface during the COVID-19 pandemic: Examining predictors and implications using latent transition analysis. Journal of Applied Psychology, 105(10), 1073.

Vostal, F. (2015). Academic life in the fast lane: The experience of time and speed in British academia. *Time & Society*, *24*(1), 71-95.

Wayne, J. H., Musisca, N. and Fleeson, W. (2004). Considering the role of personality in the work–family experience: Relationships of the big five to work–family conflict and facilitation. *Journal of Vocational Behavior, 64*(1), 108-130.

Zhou, N., and Buehler, C. (2016). Family, employment, and individual resource-based antecedents of maternal work-family enrichment from infancy through middle childhood. *Journal of occupational health psychology*, *21*(3), 309–321.

Ziemba, E.W. and Eisenbardt, M. (2021). The Effect of the Covid-19 Pandemic on ICT Usage by Academics. *Journal of Computer Information Systems*, 62(6), 1-15.

Zuppo, C. M. (2012). Defining ICT in a boundaryless world: The development of a working hierarchy. International *Journal of Managing Information Technology*, 4(3), 13.

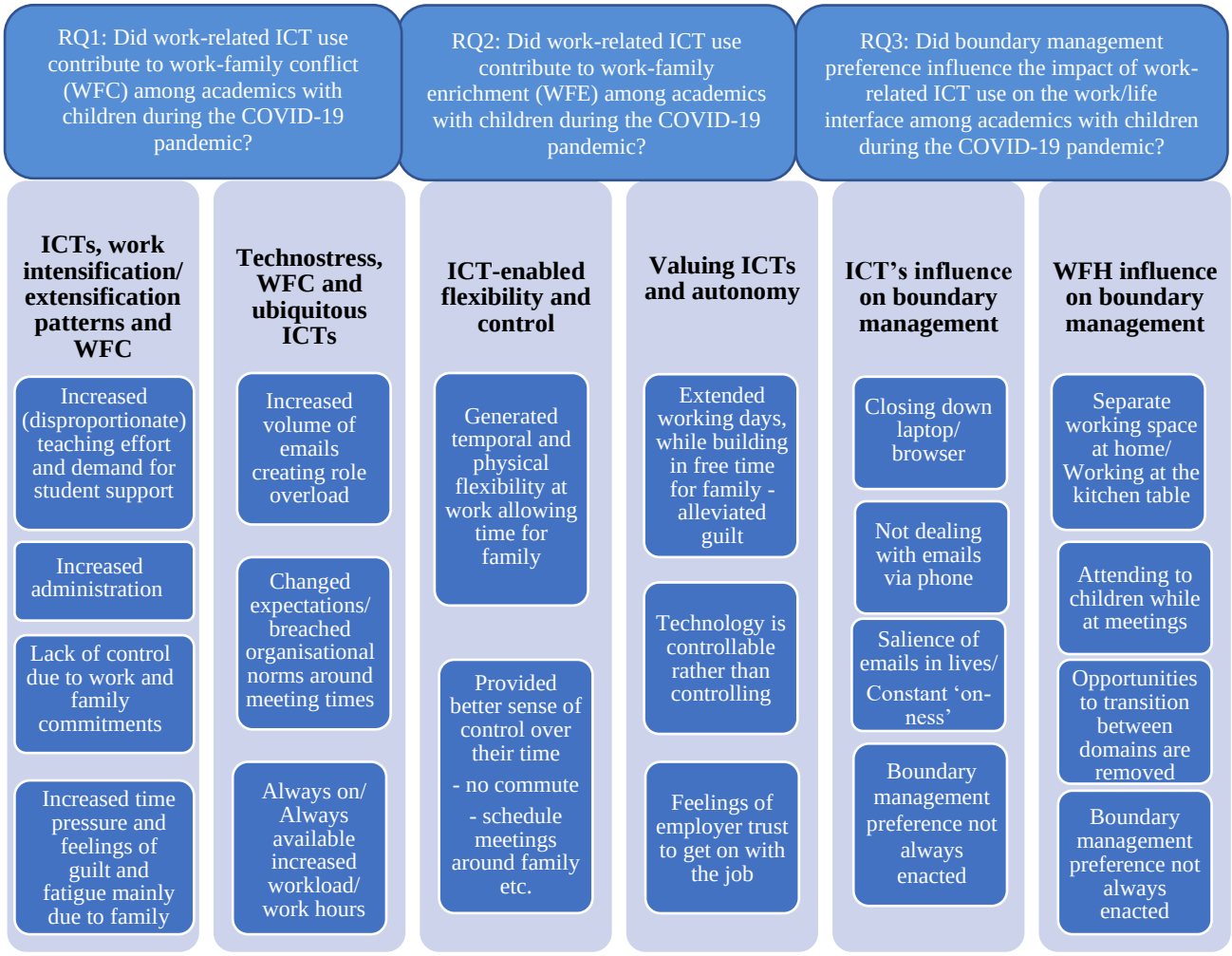

Figure 1. Summary of main findings.