

**Late-career teachers in early childhood
education: thriving at work
through professional learning and
resources enhancement**

Late-career teachers in early childhood education: thriving at work through professional learning and resources enhancement

Quentin BROUHIER

Promotrices

Isabel RAEMDONCK (UCLouvain)
Virginie März (UCLouvain)

Thèse présentée en vue de
l'obtention du grade de Docteur
en sciences psychologiques et
de l'éducation

Comité d'accompagnement et jury

Stefan AGRIGORAEI (UCLouvain, President of the jury)
Isabel RAEMDONCK (UCLouvain, Promotor, Secretary of the jury)
Virginie MÄRZ (UCLouvain, Promotor)
Marianne VAN WOERKOM (Tilburg University, The Netherlands)
Geert DEVOS (Ghent University)
Catherine VAN NIEUWENHOVEN (UCLouvain)
Annet DE LANGE (Open University, Heerlen, The Netherlands)



Interuniversity Center for Educational Sciences

Table of contents

Table of contents	5
Abstract / Résumé	7
Acknowledgements / Remerciements	Error! Bookmark not defined.
Overview of the dissertation	9
PART I General introduction	15
Chapter 1 Introduction, theoretical and methodological frameworks	15
1. <i>Problem Statement</i>	15
2. <i>Research Paradigms and Conceptual Framework</i>	17
PART II Empirical chapters of the present dissertation	43
Chapter 2 Professional learning of LCT : A systematic literature review	37
1. <i>Introduction</i>	39
2. <i>Theoretical Framework</i>	41
3. <i>Methods</i>	43
4. <i>Results</i>	48
5. <i>Discussion</i>	54
Chapter 3 Examining job demands and job resources of LCT	61
1. <i>Introduction</i>	62
2. <i>Theoretical framework</i>	63
3. <i>Methods</i>	65
4. <i>Results</i>	68
5. <i>Discussion</i>	75
6. <i>Limitations and future research</i>	76
7. <i>Practical implications</i>	79
8. <i>Conclusion</i>	80
Chapter 4 Personal resources at work: understanding LCT' profiles	81
1. <i>Introduction</i>	83
2. <i>Theoretical framework</i>	84
3. <i>Methods</i>	88
4. <i>Results</i>	96
5. <i>Discussion</i>	101
6. <i>Conclusion</i>	104
Chapter 5 Experiencing the later years through the lens of LCT' personal resources	105
1. <i>Introduction</i>	107

2. <i>Theoretical framework</i>	107
3. <i>Method</i>	110
4. <i>Results</i>	114
5. <i>Discussion</i>	124
6. <i>Limits and future research</i>	126
7. <i>Practical implications</i>	127
Chapter 6 Trained to thrive: Strengthening personal resources of LCT	129
1. <i>Introduction</i>	131
2. <i>Theoretical framework</i>	132
3. <i>Methods</i>	138
4. <i>Results</i>	143
5. <i>Discussion</i>	150
PART III General discussion	165
Chapter 9 Main findings, methodological and theoretical contributions	161
1. <i>Addressing key challenge 1: characterising late-career teachers and their professional learning experiences</i>	161
2. <i>Addressing key challenge 2: Understanding conditions influencing late-career teachers' work engagement and professional learning</i>	163
3. <i>Addressing key challenge 3: Leveraging personal and job resources to sustain late-career teachers' work engagement and learning</i>	166
4. <i>Addressing key challenge 4: Designing and evaluating interventions to support late-career teachers</i>	167
5. <i>An integrative reflection on the JD-R model for late-career teachers</i>	175
Chapter 10 Limitations and implications for future research and practice	178
1. <i>Situated knowledge and research positionality: Implications for internal validity</i>	178
2. <i>Reflections on external validity in a mixed-methods design</i>	180
3. <i>Future research perspectives</i>	183
4. <i>Further epistemological and methodological reflections</i>	186
5. <i>Practical implications</i>	190
References	195
Appendices	225
<i>Appendix A Contextual background framing LCT in a changing world: Demographic, policy, and workplace perspectives</i>	227
<i>Appendix B Supplementary materials from chapter 2: Research syntaxes, flow chart, and checklist</i>	241
<i>Appendix C Supplementary materials from chapter 6: Overview of the intervention</i>	247

Abstract

This dissertation investigates how to sustain late-career teachers' (LCT) engagement and professional learning in early childhood education, with particular attention to the interplay between job demands, available job resources, and personal resources. Drawing on five interrelated studies, including a systematic literature review, qualitative and quantitative analyses, and a professional learning intervention, it reveals how LCT navigate complex and evolving professional landscapes. While contextual constraints such as high workloads and resource limitations often erode engagement, the research highlights the transformative potential of relational support, identity work, and context-sensitive interventions. The findings call for a shift away from deficit-based views of ageing professionals, advocating instead for leadership and policy frameworks that promote holistic, participatory approaches. Ultimately, this work underscores that supporting LCT is not only a matter of individual well-being, but also essential for ensuring the continuity, quality, and sustainability of early childhood education systems.

Résumé

Cette thèse examine les conditions nécessaires au maintien de l'engagement professionnel et de l'apprentissage des enseignants en fin de carrière dans l'enseignement préscolaire, en portant une attention particulière à l'interaction entre les exigences du métier, les ressources disponibles et les ressources personnelles. S'appuyant sur cinq études complémentaires, incluant une revue systématique de la littérature, des analyses qualitatives et quantitatives, ainsi qu'une intervention en formation professionnelle, elle met en lumière la manière dont ces enseignants naviguent dans des environnements professionnels complexes et en constante évolution. Si les contraintes contextuelles, telles que la charge de travail élevée et le manque de ressources, tendent à fragiliser l'engagement, les résultats soulignent le potentiel transformateur du soutien relationnel, du travail identitaire et des interventions sensibles au contexte. Cette recherche plaide pour un dépassement des approches déficitaires souvent associées aux professionnels vieillissants, en faveur de cadres de leadership et de politiques éducatives qui encouragent des approches holistiques et participatives. En définitive, soutenir les enseignants en fin de carrière ne relève pas seulement du bien-être individuel, mais constitue également un enjeu central pour assurer la continuité, la qualité et la durabilité des systèmes d'éducation préscolaire.

Overview of the dissertation

This doctoral dissertation is presented in a cumulative or article-based format, combining and the academic rigour of five peer-reviewed empirical studies within a unifying theoretical and methodological framework. While structured around five empirical articles, the dissertation also includes an extended introduction and general discussion, which together ensure the coherence and integration of the scholarly manuscript as a whole. The research focuses on the professional experiences of late-career teachers (LCT) in early childhood education contexts, with particular attention to their work engagement and professional learning. Each article addresses a specific aspect of this broader topic, while the introductory and concluding chapters provide context, draw connections between the studies, and highlight their collective contributions. This structure supports both detailed investigation of individual research questions and a comprehensive understanding of the wider phenomenon, organized across three clearly defined sections.

The first part of this dissertation, presented in **Chapter 1**, introduces the subject of this dissertation, defines its scope, and outlines the central research objectives and questions. It also establishes the problem statement¹ and presents the theoretical and methodological frameworks that guide the study.

The second part, comprising **Chapters 2 through 6**, consists of five interrelated empirical studies that form the core of this doctoral research. Each chapter presents a standalone study, detailing its methodology, data collection strategies, findings, and specific contributions. While each study addresses a distinct aspect of the research focus, they are conceptually and methodologically connected. Table 1 and Figure 1, located at the end of Chapter 1, provide an overview of the objectives, methods, and contributions of each study, highlighting how they collectively contribute to a cumulative and evidence-based understanding of LCT professional experiences.

The final part, encompassing **Chapters 9 and 10**, is dedicated to the synthesis and interpretation of the research findings. **Chapter 9** offers an integrated analysis of the results from the five empirical studies, identifying overarching themes, points of convergence and divergence, and situating the results within the broader academic literature. **Chapter 10** extends this discussion by discussing the theoretical and practical implications of the findings, acknowledging the study's limitations, and proposing directions for future research. This chapter also includes appendices with supplementary methodological and contextual information relevant to the dissertation.

¹ To support a more comprehensive understanding of late-career professionals' experiences, **Appendix A** offers extended material addressing the wider societal, demographic, and biological conditions that shape the later stages of working life. It considers population ageing as a global phenomenon and explores its implications for labour markets and public policy. Topics such as age-based stereotypes, institutional ageism, and age-related physiological or cognitive changes are also examined, highlighting the complexities that influence late-career trajectories. These intersecting factors provide essential context for analysing the lived realities of older professionals, particularly in physically and emotionally demanding fields such as teaching

PART I

General introduction

Chapter 1

Introduction, theoretical and methodological frameworks

Introduction, theoretical and methodological frameworks

1. Problem statement

In many countries, education systems are experiencing a demographic shift in which older teachers represent a growing proportion of staff (Organisation for Economic Co-operation and Development [OECD], 2019). As birth rates decline and retirement ages increase, governments are relying on these experienced professionals to remain in service longer, partly to reduce pension costs and mitigate the effects of teacher shortages (OECD, 2020). Teachers in the later stages of their careers² hold a critical position within the education workforce, yet they increasingly face growing structural and professional challenges. Their career paths are shaped by a convergence of demographic, institutional, and cultural changes that add complexity to their profession (Day, 2017; Fullan & Hargreaves, 2012).

At the same time, the pace of technological change, shifting pedagogical approaches, and evolving team cultures can generate considerable strain, particularly in contexts where support mechanisms are lacking (Fasbender et al., 2016; Pressley, 2021). Meanwhile, professional development structures often prioritise early-career teachers, leaving LCT with limited access to guidance, mobility, or opportunities, with career trajectories typically constrained to horizontal movement rather than vertical advancement (Kelchtermans, 2017). In some systems, age-related stereotypes and policy orientations further exacerbate this disparity, reinforcing patterns of professional stagnation among older educators (Zhang et al., 2020).

Adding to these pressures are the broader shifts in educational governance. Over the past two decades, policy reforms have increasingly emphasised accountability, measurable performance, and standardised testing, often without adequate regard for the lived realities of teachers on the ground (Nichols & Berliner, 2007; Skinner & Beers, 2016). For LCT, many of whom entered the profession under more trust-based frameworks, such reforms can provoke a sense of professional displacement between their pedagogical values and institutional expectations (Day et al., 2006; Kelchtermans, 2017). The ongoing pressure to continuously demonstrate effectiveness, coupled with diminishing autonomy and increased scrutiny, contributes to a gradual erosion of motivation and job satisfaction (Ballet & Kelchtermans, 2009).

These challenges were significantly exacerbated by the COVID-19 pandemic, which introduced unprecedented disruptions to educational systems worldwide. For LCT the abrupt shift to remote instruction during 2020–2021 presented a particularly steep learning curve (Trust & Whalen, 2021). Many LCT were required to adopt unfamiliar digital tools with limited prior training or institutional support, despite often reporting lower levels of technological self-efficacy (Carreon et al., 2021, Sokal et al., 2020). These conditions heightened stress and hindered engagement, particularly in contexts where expectations for

² For clarity and conciseness, this dissertation refers to this group as late-career teachers (LCT)

pedagogical continuity were high, but resources were scarce (Hong et al., 2021; Westphal et al., 2022). In parallel, the merging of personal and professional domains, especially for LCT involved in caregiving for grandchildren or elderly relatives, amplified tensions around work-life balance, further increasing the risk of burnout and emotional fatigue (Collie, 2023; Pressley, 2021).

In the wake of heightened structural pressures, exacerbated by the COVID-19 pandemic, LCT face a cascade of individual consequences that manifest both in the short and long term. Initially, persistent exposure to elevated job demands, shifting institutional expectations, and digital adaptation requirements has led to a notable decline in well-being, job satisfaction, and professional motivation (Ortan et al., 2021). Teachers frequently report emotional exhaustion, cognitive overload, and difficulties maintaining a work-life balance, factors that significantly undermine their sense of competence and self-efficacy (Nwoko et al., 2023; Turner et al., 2021). These short-term effects are not only detrimental to the individual but also to the professional climate, as they often lead to early signs of withdrawal from collaborative practices and resistance to innovation (Albulescu et al., 2018; Arnup & Bowles, 2016). Over time, if left unaddressed, these stressors accumulate and evolve into more severe outcomes, including chronic burnout, increased absenteeism, and eventual attrition from the profession (Aloe et al., 2014; Ghanizadeh & Jahedizadeh, 2015). Such long-term consequences are particularly damaging within school systems, as they disrupt institutional cohesion, hinder the mentoring of younger colleagues, and result in the loss of valuable expertise (Diliberti & Schwartz, 2023; Hanselman et al., 2016; Ronfeldt et al., 2013).

The challenges faced by LCT are particularly acute in early childhood education (ECE), the primary focus of this dissertation. In these ECE settings, teachers operate in highly demanding environments that require simultaneous management of caregiving, pedagogical, and administrative tasks. While ECE has traditionally been viewed as a nurturing, flexible, and child-centred domain (Madrid & Dunn-Kenney, 2010), this perception is shifting under the weight of intensifying professional demands. Teachers now face expanding responsibilities, increased student testing, performance monitoring, and constant innovation, resulting in the progressive alignment of ECE education with managerial and results-based models typical of primary and secondary schooling (Ballet & Kelchtermans, 2009; Bullough et al., 2014). These developments have redefined long-standing program goals and heightened accountability pressures, creating a professional context that is particularly challenging for late-career teachers, who may struggle to meet these evolving expectations while maintaining their well-being and pedagogical integrity (Alves et al., 2020; Hooghart, 2006).

Alongside emotional and cognitive demands, ECE teachers are subject to intense physical strain that are often overlooked in education discourse (Cau-Bareille, 2016). Interacting with young children entails repeated tasks such as lifting, squatting, and navigating in a child-sized environment, activities requiring considerable physical endurance in ergonomically unsuitable conditions. These daily physical requirements have been associated with a range of health issues, including reduced fitness, musculoskeletal pain, and stress, which compromise both personal well-being and professional sustainability (Randall et al., 2023). These embodied aspects of the profession, although central to its practice, remain largely invisible in policy frameworks and institutional support structures. Compounding this, ECE continues to be undervalued within broader educational hierarchies. Teachers in this sector

are typically subject to low remuneration, minimal recognition, and fragmented access to professional development. These conditions contribute not only to dissatisfaction and attrition, but also to a pervasive sense of marginalisation (Cumming, 2017; Kwon et al., 2021). This is particularly troubling given the well-established link between teacher well-being and student development outcomes (Jeon et al., 2019; Singh et al., 2013), as well as the central role that late-career teachers play in ensuring continuity and stability within early learning environments.

Despite the gravity of these issues, their substantial presence in the teaching workforce and their potential to drive educational improvement, research on late-career teachers in early childhood education remains limited (Cumming, 2017; Gore & Rickards, 2021), particularly with regard to the protective factors and institutional conditions that enable sustained professional engagement (Babic et al., 2022). A developmental approach is urgently needed, one that integrates both personal coping strategies and organisational resources to help LCT navigate adversity and potentially transform it into meaningful professional growth (Aldwin, 2007; Compas, 1993; Skinner & Zimmer-Gembeck, 2007). Such an approach would move beyond deficit narratives and short-term solutions, promoting sustained motivation through context-sensitive interventions, flexible learning opportunities, and inclusive professional cultures. Ultimately, ensuring the engagement and well-being of late-career teachers is not only a matter of individual support but a systemic imperative for educational continuity, institutional memory, and intergenerational cohesion within schools.

2. Research paradigms and conceptual framework

2.1 Research paradigms adopted in this dissertation

This dissertation is firmly situated within the field of educational sciences, a domain defined by its epistemological pluralism and its historical integration of insights from sociology, philosophy, linguistics, political science, and psychology (Hofstetter & Schneuwly, 2001). In the Francophone academic context, educational sciences are not regarded as a monolithic discipline but rather as a hybrid and evolving field, characterised by what Bencher (1989) terms a *pluralité constitutive*. This conceptual openness enables educational research to draw productively on adjacent disciplinary traditions while maintaining a distinct orientation: the critical analysis of educational practices, institutions, and subjectivities. Within this framework, the issue of late-career teachers emerges as a critical area of concern, not only due to their growing representation in the educational workforce but also because of their influence on the quality, equity, and sustainability of education systems (OECD, 2021). In this spirit, the present dissertation engages with frameworks from organisational and developmental psychology, not in service of an individualised or decontextualised analysis, but to shed light on how educational actors, namely late-career teachers, experience and negotiate complex institutional environments shaped by policy reform, workplace demands, and shifting pedagogical priorities. As Tomamichel (2003) emphasises, the aim of educational research is to produce knowledge that responds to and emerges from professional practice. This study thus positions itself within that objective: to contribute to the development of actionable, context-sensitive knowledge about how institutions can support teachers' engagement and development across the career span.

The research is anchored in a educational problem: how late-career teachers, particularly in early childhood education, sustain professional learning and work engagement in contexts shaped by both structural constraints and personal transitions. Unlike studies limited to the psychological determinants of work longevity, this dissertation adopts an educational perspective to investigate how teaching, as a situated and relational practice, evolves over time. Specific attention is paid to the influence of institutional dynamics, such as leadership structures, collegial cultures, and learning opportunities, on teachers' motivation to learn, their interpretation of professional development, and their capacity to adapt. Through the use of teacher learning theories and a focus on *in situ* development, the study contributes to educational scholarship that addresses career sustainability not only as an individual concern but as a systemic issue involving shared responsibilities within schools and education systems. In doing so, it responds to the call for research that bridges personal trajectories and structural realities, and seeks to inform both theory and educational practice in a context of demographic change and increased professional complexity (Sachs, 2016).

Building on this positioning within educational sciences, this dissertation addresses in current research. Despite increasing awareness of the challenges faced by teachers, significant gaps persist in our understanding of how LCT, particularly those in early childhood education, sustain their engagement, learning, and well-being over time. While existing studies have extensively documented the psychological, emotional, and behavioural consequences of occupational stress, there is comparatively little knowledge about the protective factors that enable teachers to maintain work engagement in the later stages of their careers (Babic et al., 2022). In this regard, the role of institutional support, professional learning, and personal resource management emerges as a crucial area of inquiry. These gaps are even more pressing given the aging population, evolving educational policies, and heightened professional demands, all of which complicate the lived realities of LCT in emotionally and physically demanding roles such as those in ECE settings. Addressing these issues requires an integrative approach that accounts for the dynamic interplay between individual and contextual across the professional lifespan.

To begin, the first section explores successful aging at work and positive psychology, two complementary fields that offer valuable perspectives on professional longevity and well-being of late career workers. The concept of successful aging at work emphasizes adaptation, self-regulation, and resource management within the workplace, highlighting how individuals sustain their engagement and effectiveness over time. Positive psychology, as a complementary lens, foregrounds the affective and motivational components of career experiences, focusing on constructs such as resilience, well-being, and long-term growth across the career lifespan (Kooij et al., 2020). By contextualizing this dissertation within these theoretical domains, this section will establish critical links between teacher engagement, well-being, and the strategies that foster long-term professional fulfilment.

The second section introduces the job demands–resources (JD-R) model, that provides a valuable lens for understanding how teachers maintain work engagement and well-being in the face of occupational stress, and realise professional growth, particularly in late career. By highlighting the interaction between job demands (e.g., workload, emotional strain) and both job and personal resources (e.g., autonomy, professional support, self-efficacy), the model emphasizes resource accumulation and proactive adaptation as key to sustaining motivation over time. This perspective is particularly relevant when considering teachers' professional

learning (TPL), which increasingly relies on individuals' agency and capacity to draw on internal and external supports to remain engaged in their development. For LCT, however, these adaptive processes are complicated by the very challenges outlined above which can undermine both their motivation and their capacity to remain engaged in ongoing development (Zhang et al., 2020). While life-long learning has become a global educational priority (Butler, 2005; OECD, 2013), concerns persist around the extent to which professional learning opportunities are adequately tailored to teachers' diverse needs and career stages (Schleicher, 2011). Many initiatives remain overly prescriptive, overlooking the professional agency and situated expertise of experienced educators (Tannehill et al., 2021). In this dissertation, professional learning is understood as encompassing a wide range of formal and informal experiences, including structured training, collaborative inquiry, and reflective practices, through which teachers develop, adapt, and sustain their professional competence over time (Avalos, 2011; Webster-Wright, 2009).

2.1.1 Successful ageing at work

Over the past three decades, the concept of *successful ageing* has gained prominence in developmental psychology, cognitive ageing, and gerontology, where it refers to the psychological and behavioural processes that promote adaptation, well-being, and continued functioning across the adult lifespan (Baltes & Baltes, 1990; Rowe & Kahn, 1997). More recently, the concept has been extended to the work context, where it provides a relevant framework for understanding how older adults can remain engaged, healthy, and productive in late career stages, particularly as retirement ages rise and working lives lengthen (Kooij, 2015a, 2015b; Zacher, 2015a; 2015b).

Originally, research on older workers tended to examine either individual-level traits, such as health, motivation, or cognitive ability, or structural factors like job design or retirement policy. However, recent models propose that successful ageing at work serves as a useful integrative framework that links these two dimensions. In particular, the work of Kooij and Zacher reframes ageing not as a period of decline, but as a dynamic process of intra-individual change shaped by the interaction between personal capacities and environmental conditions (Beier et al., 2018). These perspectives emphasise how late-career workers actively regulate their work engagement and well-being through strategies such as job crafting, selective engagement, and adaptive goal setting (Heckhausen et al., 2010; Jopp & Smith, 2006).

The term *successful ageing at work* was first introduced by Abraham and Hansson (1995) as a way to challenge age-based stereotypes, defining it as maintaining competence and achieving personally meaningful goals relative to same-aged peers. Since then, several models have refined this definition. Robson et al. (2006) proposed five key dimensions: adaptability and health, positive social relationships, occupational growth, personal security, and goal attainment. Zacher (2015) added a developmental lens, highlighting individual trajectories that deviate positively from normative age-related decline. Kooij (2015) defined successful ageing at work as the sustained capacity to maintain health, motivation, and work ability over time. Together, these conceptualisations underline the importance of agency, self-regulation, and environmental support in fostering sustainable working lives.

A key determinant of successful ageing at work is the concept of person-environment fit, which refers to the alignment between employees' values, needs, and abilities and the

resources, demands, and culture of their workplace (Edwards, 1991). This fit ensures that late career workers are better equipped to utilize their knowledge, skills, and abilities effectively, thereby fostering their capacity and desire to continue working (Beier et al., 2020). The fulfilment of salient personal goals by the work environment further encourages late career workers to remain engaged. In addition, successful ageing at work requires action at multiple levels, individual, team, organizational, and societal, to address barriers such as age discrimination and enhance the experiences of late career workers. For example, research has shown that health expenditure per capita can mitigate the negative effects of ageing on sickness absences and physical health issues (Shao et al., 2022).

Successful aging at work is often evaluated based on two key outcomes: the ability and motivation to continue working. The ability to work refers to the physical and psychological capacity required to meet job demands, as indicated by measures such as job performance and work ability (Ilmarinen et al., 1991). Motivation to work reflects a worker's desire to remain in the workforce, often influenced by factors such as well-being and job satisfaction (Kanfer et al., 2013). These outcomes highlight the importance of understanding how aging affects both the physical and psychological dimensions of work overtime.

In the light of these developments, recent scholarship has also highlighted the importance of recognising heterogeneity among late-career workers (Zacher & Schmitt, 2016). Rather than viewing them as a homogeneous group, current perspectives emphasise that older employees differ markedly in terms of health status, work values, occupational future time perspective, and centrality of work in their lives (Bal & Jansen, 2016). These differences shape their experiences, expectations, and strategies for adapting to age-related changes at work. As a result, person-centred approaches have therefore gained prominence, aiming to identify distinct subgroups of late-career workers and understand how specific combinations of personal and contextual factors influence their work experiences (Beier et al., 2018). Such approaches offer a more refined lens for examining successful ageing at work and offer a basis for developing tailored interventions that reflect the varied needs and strengths of late-career employees. Within this broader scholarly shift, there remains a notable gap in the literature in understanding the antecedents of this process, how these dynamics unfold in the specific case of late-career teachers.

2.1.2 Positive psychology

While successful aging at work emphasises adaptation and the regulation of resources within the workplace, positive psychology offers a complementary perspective by expanding this approach to include emotional and motivational dimensions, as well as focusing on factors that promote well-being and resilience. This broader perspective can provide deeper insights into the antecedents and the underlying mechanisms of successful aging and productivity among late-career workers, facilitating the development of more targeted interventions to support them.

Emerging as a paradigm shift within psychological science, positive psychology redirected attention towards the conditions that enable individuals and communities to flourish. Rooted in both Aristotelian philosophy and contemporary psychological research, this paradigm emphasises the cultivation of virtues, personal strengths, and meaningful engagement as pathways to well-being. Rather than viewing human behaviour through a lens of pathology or self-interest, positive psychology asserts that people are fundamentally motivated by

social, ethical, and growth-oriented impulses (Seligman & Csikszentmihalyi, 2000). This shift has contributed to a broader interdisciplinary interest in well-being, influencing fields as diverse as organisational studies, education, and health sciences.

Over time, positive psychology has evolved to incorporate greater complexity and contextual sensitivity. The second wave acknowledges the dialectical nature of well-being, recognising the interdependence of positive and negative experiences, as well as the influence of cultural and situational factors (Lomas & Ivztan, 2016; Wong, 2011). More recently, a third wave has emerged, emphasizing systems thinking, interdisciplinarity, and the broader socio-cultural and ecological contexts in which well-being unfolds (Wissing, 2022). These developments reflect a move toward a more holistic, integrative understanding of human flourishing, one that aligns closely with the dynamic and situated realities of professional life.

Building on the foundational principles of humanistic psychology, positive psychology interventions (PPIs) have emerged as a central mechanism for translating theory into practice. PPIs refer broadly to intentional activities designed to enhance well-being by cultivating positive emotions, cognitions, and behaviours (Sin & Lyubomirsky, 2009). While definitions vary, there is general agreement that PPIs must be rooted in the theoretical framework of positive psychology and supported by empirical evidence (Bolier et al., 2013; Parks & Biswas-Diener, 2013; Schueller & Parks, 2014). These interventions are grounded in scientifically validated mechanisms and aim not only to reduce distress but to promote flourishing, personal growth, and optimal functioning. Far from being simplistic exercises in optimism, PPIs engage with core psychological constructs such as self-efficacy, gratitude, compassion, and meaning making. They also reflect a shift toward strength-based approaches that align with the tradition of well-being that emphasises the development of virtues and the realization of personal potential.

PPIs vary considerably in form and scope. Single-component interventions typically focus on one specific dimension of well-being, such as gratitude, kindness, or signature strengths, through targeted and replicable practices (e.g., Alden & Trew, 2013; Proyer et al., 2015). In contrast, multi-component positive psychology interventions (MPPIs) integrate several evidence-based techniques within a coherent framework to address multiple facets of well-being simultaneously, often combining hedonic and eudaimonic aims. Meta-analyses have demonstrated the efficacy of MPPIs across clinical and non-clinical populations, with a growing body of randomized controlled trials (Hendriks et al., 2020). Yet, their application in educational settings, particularly for supporting teachers' resilience, work engagement, and resource development, remains underexplored (Rahm & Heise, 2019). A promising direction involves adapting MPPIs to address the complex and situated nature of educational work, enabling interventions that not only enhance psychological well-being but also reinforce professional identity and capacity for sustained work engagement. Such integrative designs may prove particularly beneficial for educators navigating the later stages of their careers.

These evolving insights into the nature of well-being and personal growth provide a valuable foundation for this dissertation. In particular, the conceptual emphasis on strength-based development and flourishing offers a counterpoint to dominant narratives of decline in late career. Building on this foundation, the next section presents two key theoretical models within this dissertation, the Job Demands-Resources (JD-R) model and the Teachers' Professional Learning (TPL) theory, that deepen our understanding of how work

engagement, well-being, and continuous development are sustained in demanding educational contexts.

2.2 Conceptual framework

2.2.1 *The job demands-resources model*

The JD-R model, first introduced by Demerouti et al. (2001), has become a foundational framework in occupational health psychology for understanding how workplace conditions shape employee well-being and motivation. Designed as a flexible alternative to earlier models such as Karasek's Job Demand-Control model and Siegrist's Effort-Reward Imbalance model, the JD-R model distinguishes between two core dimensions: job demands and job resources. Job demands refer to the physical, emotional, cognitive, or social aspects of work that require effort and are associated with psychological or physiological costs. In contrast, job resources are those aspects of the work environment, such as autonomy, social support, or opportunities for development, that facilitate goal attainment, reduce strain, and foster growth. Together, these elements contribute to two interrelated processes: a health impairment process, in which excessive demands lead to exhaustion and burnout, and a motivational process, through which resources enhance engagement, defined as a state of vigor, dedication, and absorption (Schaufeli et al., 2002).

Importantly, the JD-R model also accounts for the role of employees in shaping their own work environments. Through job crafting, proactively modifying job tasks, relationships, or cognitive perceptions, employees can optimize the fit between their work and personal strengths or preferences (Tims et al., 2012; Wrzesniewski & Dutton, 2001). This dynamic perspective positions individuals not merely as passive recipients of workplace conditions but as active agents in maintaining and enhancing their own engagement and performance. Consequently, the model has found wide applicability across occupational sectors and has informed both top-down organisational interventions and bottom-up strategies aimed at individual agency.

Building on its original formulation, the JD-R model has since evolved to include personal resources as a central construct. Defined as positive self-evaluations linked to resilience, goal attainment, and environmental mastery, personal resources such as self-efficacy, optimism, and hope serve similar functions to job resources but are intrinsic to the individual (Xanthopoulou et al., 2009). These resources not only buffer the impact of job demands but also contribute directly to motivation and work engagement. Research has shown that higher levels of personal resources predict both immediate well-being and the accumulation of further resources over time, resulting in gain spirals of motivation and engagement (Hobfoll, 2002; Salanova et al., 2010). To explain these effects, scholars have drawn on the Conservation of Resources (COR) theory, which posits that individuals strive to acquire, protect, and retain valued resources and experience stress when these are threatened or depleted (Hobfoll, 2011).

Further refinements of the model suggest that employees actively regulate and adapt their work conditions over time. The active shaper hypothesis (Decius et al., 2023; de Lange et al., 2010) emphasizes that individuals engage in lifelong learning and development by proactively modifying their demands and resources to enhance person-environment fit. This is particularly relevant in professions characterized by continuous change, such as education.

From this perspective, personal resources not only sustain coping but also enable agency, adaptability, and forward-looking goal pursuit. These insights are consistent with life-span developmental theories, which recognise that individuals are not only influenced by their environment but also play an active role in shaping it through their choices, behaviours, and strategies (Bandura, 1997). For late-career teachers, especially in early childhood education, personal resources are vital to sustaining long-term engagement. Constructs such as teaching self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001), resilience (Castro et al., 2010), and occupational future time perspective (Zacher & Frese, 2009) help explain how teachers maintain motivation in the face of age-related and occupational challenges. Complementing these are strategies from developmental psychology, such as selection, optimisation, and compensation (SOC), which enable ageing professionals to prioritise tasks and adapt their methods to meet evolving demands (Baltes, 1997; Philipp & Kunter, 2013).

In parallel, contextual resources within the workplace, known as job resources, can reinforce or hinder the effectiveness of these personal capacities. In the context of ECE, where late-career teachers must manage physically strenuous, emotionally taxing, and cognitively complex roles, such resources are especially critical (Kwon et al., 2020). Physical strain, including lifting, bending, and working in ergonomically challenging environments, is common and exacerbated by age-related physical decline (Randall et al., 2023). Emotionally and cognitively, ECE teachers must respond to diverse developmental needs, manage behavioural regulation, and build nurturing relationships, all under increasing external expectations (Bullough et al., 2014; Cassidy et al., 2017). Job resources such as supportive leadership, collegial relationships, and pedagogical autonomy have been consistently linked to increased engagement and reduced burnout in educational settings (Hur et al., 2016; Viotti et al., 2020).

Taken together, these theoretical developments suggest that late-career teachers in ECE are not merely at risk of disengagement due to strain but also possess adaptive capacities that enable them to shape their professional environment and sustain well-being. By adopting the JD-R model, this dissertation aims to capture the complexity of late-career teaching experiences and to illuminate how professional engagement can be fostered through both individual agency and structural support. Building on this foundation, it is now essential to turn to the second major theoretical pillar of this dissertation: teachers' professional learning (TPL). Recent research has shown that job and personal resources are not only critical for mitigating the negative effects of job demands but also play an active role in enabling learning and development at work (Evers et al., 2016; Xanthopoulou et al., 2009). Within the JD-R framework, challenging demands such as task complexity can act as drivers of growth, while autonomy, feedback, and social support create conditions conducive to learning (Bakker, 2011; LePine et al., 2005). These mechanisms align closely with engagement theory in education, which identifies motivation and emotional involvement as key antecedents of knowledge acquisition, retention, and teacher development (Christenson et al., 2012; Fredricks et al., 2004; Pekrun & Linnenbrink-Garcia, 2012).

Furthermore, recent developments have emphasized the bidirectional nature of this relationship. Teachers who actively engage in professional learning, through reflection, collaboration, or job crafting, tend to enhance their access to resources and reshape their professional context (Wrzesniewski & Dutton, 2001; Zhang & Parker, 2019). In this light, workplace learning becomes both a product and a driver of resources enhancement,

reinforcing a self-sustaining cycle of professional growth. This integrative perspective provides a compelling rationale for exploring TPL as a key mechanism for sustaining long-term engagement and well-being among late-career teachers. The next section will build on this connection by clarifying the conceptual underpinnings of teachers' professional learning, reviewing its core definitions and principles, and examining how it contributes to career-long development in complex and evolving educational environments.

2.2.2 Teachers' professional learning

Teachers' professional learning (TPL) has emerged as a cornerstone of educational quality, reflecting a growing consensus that teacher development must be continuous, context-sensitive, and collaborative (Avalos, 2011; OECD, 2013). Historically, the distinction between "professional development" and "professional learning" lay in their format and purpose: the former described structured, often top-down training, while the latter emphasised ongoing, inquiry-based learning embedded in everyday practice (Stewart, 2014). Over time, however, these boundaries have blurred, as researchers increasingly acknowledge that teacher growth occurs across multiple settings and modalities, both formal and informal, individual and collective (Bleicher, 2014; van Veen et al., 2010). As teachers face intensifying pedagogical demands and a fast-evolving knowledge landscape (Bubb, 2004; Collinson et al., 2009), the spectrum of professional learning activities has expanded. Practices such as mentoring, self-directed inquiry, and workplace collaboration now complement more traditional workshops, reflecting teachers' need to stay abreast of innovations and policy shifts (Clarke & Hollingsworth, 2002; Al-Hinai, 2007). This evolution challenges education systems to offer opportunities that not only transfer new knowledge but also respect teachers' agency and promote relevance, engagement, and sustained impact on professional practice.

Despite this shift, access to high-quality TPL remains uneven, especially for late-career teachers, who are often underrepresented in professional learning research and overlooked in programme design (Gore & Richards, 2021; Zhang et al., 2016). Empirical studies underline the link between effective TPL and sustained engagement, improved classroom practices, and retention, particularly when learning is job-embedded and aligned with teachers' professional realities (Gartia & Sharma, 2013; van der Heijde & van der Heijden, 2006). However, accountability structures in many systems still fail to monitor or incentivise meaningful participation, and the absence of mandatory lifelong learning frameworks, limits professional learning continuity (Jaquith et al., 2010; Schleicher, 2012). Stereotypes that portray LCT as change-resistant further reinforce a disconnect between policy discourse and actual practice (Orland, 2014). Against this backdrop, the challenge is not only to expand access but to ensure that professional learning reflects the diversity of teacher experiences across career stages. Encouraging LCT participation requires an in-depth understanding of the constraints they face, both institutional and psychological, and the unique expertise they bring to their roles.

Theoretical work has responded to this complexity by broadening the definition of TPL. Many studies still use the term without clear parameters, limiting conceptual clarity and comparability (Komba & Mwakabenga, 2019). In response, scholars such as Eraut (2000) and Kyndt et al. (2014) have proposed multidimensional frameworks that distinguish between formal, non-formal, and informal learning, taking into account individual, team,

organisational and network/community levels. This view recognises the diverse ways teachers learn, whether through training sessions, collaborative planning, or unplanned dialogue with colleagues. Informal workplace learning, in particular, has gained prominence as a driver of authentic, embedded professional growth (Decius et al., 2023; Lecat et al., 2019). Teachers acquire knowledge by reflecting on experience, engaging in problem-solving, or sharing strategies with peers, forms of learning that are often more meaningful than formal sessions detached from day-to-day reality (Eraut, 2007; Jurasaitė-Harbisson & Rex, 2010). However, informal learning thrives only in cultures that support trust, collaboration, and autonomy, conditions not always met in hierarchical or accountability-driven settings (Little, 1993; Talérien et al., 2019). Building such environments is therefore central to fostering effective, lifelong teacher learning.

Recent models frame TPL not as linear progression but as a journey across a learning landscape, with teachers moving between overlapping communities of practice (Enthoven et al., 2024; Wenger-Trayner et al., 2015). This perspective aligns with social constructivist views and highlights the need to recognise learning as participatory, contextual, and ongoing (Borko et al., 2010; Derri et al., 2015). Kwakman's (2003) framework and subsequent refinements by Evers et al. (2016) have identified key activity types: staying up to date through reading and training, experimenting with practice, reflecting and seeking feedback, and collaborating with colleagues. Each of these elements contributes not only to knowledge building but also to teacher agency, confidence, and professional identity (Geijsel et al., 2009; Hoekstra et al., 2009). Nevertheless, traditional top-down professional development programmes continue to dominate in many systems. These are often criticised for being disconnected from teachers' needs, poorly adapted to varied experience levels, and ineffective in transferring learning into practice (Borko et al., 2011; Fraser, 2010).

In contrast, effective professional learning is increasingly defined by its embeddedness in everyday practice and its capacity to support sustained instructional change. Research shows that school leadership plays a pivotal role in enabling such learning through shared goals, time for collaboration, and a supportive organisational climate (Prenger et al., 2017; Spiteri & Chang Rundgren, 2017). Moreover, personal and contextual factors interact dynamically in shaping teachers' engagement in TPL. Characteristics such as motivation, openness to innovation, and emotional regulation strongly influence whether and how teachers participate in learning (Fischer et al., 2018; Girvan et al., 2016; Korthagen, 2017). For LCT, who may be navigating evolving job demands and shifting expectations, targeted support structures, such as mentoring, leadership roles, and opportunities for peer-led inquiry, can enable continued growth while affirming their experience (Kennedy, 2016; Zhang et al., 2020). In light of these findings, professional learning must be reconceived not as a standardised product but as a flexible, developmentally responsive process.

In conclusion, professional learning is not merely an input for school improvement but a fundamental dimension of teachers' career experiences. It evolves alongside their identities, work conditions, and responsibilities, shaped by a combination of personal resources, institutional affordances, and cultural narratives about teaching and ageing. Despite growing interest in differentiated approaches to TPL, research has yet to sufficiently address the needs and experiences of LCT, particularly in early childhood education. This dissertation seeks to fill that gap by examining how professional learning is accessed, enacted, and sustained in this population.

2.3 Key challenges addressed in this dissertation

While the research paradigms discussed above offer valuable lenses through which to interpret late-career professional development, they also underscore the need for a more granular understanding of how these dynamics unfold in practice. In particular, the integration of the JD-R model and teacher professional learning reveals important tensions between individual agency and systemic constraints, tensions that are especially salient in the context of ECE. Building on these paradigms, the following section identifies four interrelated key challenges that have emerged from the literature as unresolved and guide the empirical focus of this dissertation. These challenges do not operate in isolation; rather, they reflect interconnected issues and opportunities that shape the working lives of late-career teachers. Together, they shed light on the demands, constraints, and enabling conditions that influence LCT' professional learning, work engagement, and long-term sustainability in the education workforce. Each issue contributes to a more comprehensive understanding of what it means to sustain work engagement and growth in the later stages of a teaching career.

Key Challenge 1: Characterising late-career teachers and their professional learning experiences

Despite their growing demographic significance and potential to drive educational improvement, LCT remain inconsistently defined and underrepresented in empirical research (Gore & Rickards, 2021). Terms such as “experienced”, “veteran”, “senior”, or “expert” are often used interchangeably, yet there is little consensus on the thresholds that distinguish this group. Definitions of LCT vary considerably across the literature, with studies using different criteria such as chronological age (typically over 50), years of teaching experience (ranging from as few as 5 to over 30 years), or career stage (Armour & Yelling, 2004; Beutel & Spooner-Lane, 2009; Geeraerts et al., 2018; Henniger, 2008; van der Heijden et al., 2015; Zhang et al., 2017). A further complication lies in the diversity of professional backgrounds within this group, encompassing both teachers who have remained in the profession throughout their adult lives, and those entering the teaching profession in a later career stage as a second career (Coppe et al., 2024; Shwartz & Dori, 2020). This diversity of professional experience is particularly evident among ECE professionals, who vary widely in their levels of training, education, and role-specific requirements depending on national and institutional regulations (Powers et al., 2025). These diverse pathways contribute to differing professional identities, career motivations, and learning needs.

Furthermore, this definitional ambiguity not only complicates comparative research but also obscures meaningful intra-group differences. Teaching experience is often conceptualised in overly uniform terms, failing to account for the evolving nature of expertise and the diverse motivations, self-efficacy beliefs, and adaptive capacities found among LCT (Raduan & Na, 2020). Moreover, much of the existing research has focused on attitudes toward older workers, who are frequently characterized as less adaptable, less motivated, and resistant to change (Bal et al., 2011; Levy & Macdonald, 2016; Marchiondo et al., 2019). While such stereotypes are not necessarily supported by empirical studies in teacher research, they may nonetheless shape organisational culture and limit access to meaningful professional learning opportunities, ultimately influencing how LCT perceive and enact their roles.

In addition, relatively little is known about the specific forms of professional learning in which LCT engage, or the extent to which they participate in such activities. Understanding the types of learning experiences LCT seek out, or avoid, is essential to developing more responsive and differentiated support strategies for learning. These patterns of participation may reflect not only access and availability, but also deeper issues related to identity, perceived value, and institutional recognition. Moreover, given the increasing recognition that learning embedded in daily work tasks constitutes a critical form of professional growth, it is important to explore how LCT experience and navigate (in)formal, practice-based learning opportunities, an area that remains notably under-researched (Bakkenes et al., 2010).

To address this gap, **Study 1**, located in **Chapter 2**, presents a mixed-methods systematic literature review aimed at clarifying how LCT are conceptualised across existing scholarship and exploring the specific forms of professional learning associated with this group. Drawing on the JD-R model (Bakker & Demerouti, 2014; Schaufeli, 2017) as a guiding analytical framework, the study synthesises both quantitative and qualitative evidence to provide a state-of-the-art overview of professional learning for LCT. Following PRISMA guidelines (Moher et al., 2009), the review systematically examines four electronic databases and included citation tracking and manual screening to ensure comprehensive coverage. The review explores how LCT are defined and framed across studies, what kinds of activities constitute their professional learning, how job demands and personal resources interact to shape their learning experiences. By addressing these questions, the review contributes to essential insights into the ways in which professional learning is supported or hindered in the later stages of teachers' careers. This first study thus not only identifies key gaps in the current research literature but also sets the stage for the subsequent empirical investigations presented in this dissertation.

Key Challenge 2: Understanding conditions influencing late-career teachers' work engagement and professional learning

To support meaningful work engagement among LCT, a developmental approach to professional learning and contextual support related to workplace conditions and access to relevant learning opportunities is needed, one that recognises both their accumulated strengths and evolving needs. Rather than being defined solely by age or tenure, LCT's experiences are shaped by their specific work environments and shifting professional expectations (Day & Gu, 2010). In early childhood education, the intensification of job demands presents particular challenges for LCT, whose physical and emotional capacities may be strained after decades of service. The teacher role increasingly requires differentiated instruction, developmental monitoring, emotional regulation, and close collaboration with families, expectations that apply across all career stages but may weigh more heavily on LCT (Bullough et al., 2014; Elicker et al., 2013).

Physically, tasks such as bending, lifting, and floor-seated interactions risk musculoskeletal strain (Randall et al., 2023), and emotionally, sustained affective labour may lead to burnout, especially when support is lacking (Inbar & Shiri, 2021). These cumulative pressures often intersect with broader organisational transformations, including increased administrative workload and policy reforms, which demand constant adaptation and threaten teachers' sense of autonomy and recognition (Kelchtermans, 2017).

Professional learning has become central to educational reform agendas, as teachers are increasingly expected to update their practices in response to evolving student needs and policy requirements (Papadakis & Drakaki, 2023). However, despite the rhetoric of lifelong learning, LCT often face structural and psychological barriers to meaningful participation in professional development. Many schools lack mechanisms to tailor training to their needs, and available opportunities frequently favour standardised, one-size-fits-all approaches that overlook the specific challenges of later-career stages (Bayar, 2014; Louws et al., 2017). Motivational shifts also occur over time: while early-career teachers may prioritise content acquisition, LCT may seek greater autonomy, validation, and opportunities for pedagogical reflection (Avalos, 2011). Yet many report feeling marginalised in professional learning programmes, reinforcing disengagement and age-based stereotypes (Zhang et al., 2020). Importantly, access to supportive leadership, collaborative cultures, and institutional recognition can serve as critical levers for maintaining work engagement and well-being. Conversely, when such conditions are absent, even the most experienced teachers may find themselves withdrawing from learning activities and question their ongoing relevance or sense of belonging within the teaching profession (Jansen in de Wal et al., 2020; Admiraal et al., 2019).

Professional learning, well-being, and work engagement are deeply interconnected and shaped by teachers' experiences of institutional and relational contexts. Supportive leadership, peer collaboration, and access to autonomy have been shown to foster meaningful engagement, while unsupportive environments may erode motivation and reduce participation in learning (Jansen in de Wal et al., 2020; Kennedy, 2016). While much is known about the structural and relational conditions that support teacher engagement, little research has examined how LCT in early childhood education perceive and respond to these conditions in their everyday professional lives. An in-depth understanding of how LCT navigate the final stages of their careers requires listening to their voices and examining the intersection of personal trajectories and systemic constraints. Investigating how LCT make sense of the demands they face, and the resources they draw upon, is therefore a critical step in deepening our understanding of engagement and learning in the later career phases. Qualitative inquiry offers a valuable avenue to explore these lived experiences and to better grasp the factors that shape, constrain, or support career sustainability from the perspective of those most directly affected.

Study 2 builds directly on these theoretical insights by exploring how LCT experience and interpret the balance between job demands and resources in their day-to-day practice. Despite their numerical importance, the perspectives of LCT remain underrepresented in the literature, particularly in French-speaking Belgium. This study adopts an inductive, phenomenological approach to address this gap, providing a rich and detailed account of LCT's lived experiences during the final stages of their professional journey.

Two main research objectives guide this investigation: first, to understand how LCT conceptualise and reflect on the final phase of their careers; second, to identify the specific contextual resources, as well as the daily demands, that shape their work engagement and well-being. Data were gathered from 24 LCT through two in-depth, semi-structured interviews spaced a week apart, allowing for the refinement of insights and adaptation of questioning based on prior responses. Thematic content analysis was employed to uncover recurring patterns and to capture the interplay between individual trajectories and contextual

factors. By focusing on how job characteristics and internal capacities intersect, this study offers valuable contributions to the ongoing conversation on career sustainability, work engagement, and professional identity among experienced educators in ECE. These findings provide essential groundwork for developing more supportive educational environments that acknowledge the evolving strengths and needs of teachers at the later stages of their careers.

Key Challenge 3: Leveraging personal and job resources to sustain late-career teachers' work engagement and learning

According to the JD-R model (Bakker & Demerouti, 2007), LCT' capacity to maintain work engagement is shaped not only by job demands but also by the availability of resources that buffer stress and support well-being. These include both personal resources, such as self-efficacy and resilience, and job resources, such as supportive leadership, collegial collaboration, and access to autonomy and recognition. Research has shown that personal resources play a critical role in how teachers cope with occupational stress and navigate changing demands. For example, high levels of self-efficacy and emotional competence are associated with greater resilience and job satisfaction, particularly under demanding conditions (Xanthopoulou & Bakker, 2021). Conversely, depleted personal resources can accelerate disengagement and emotional exhaustion, especially in environments lacking structural support (Näring et al., 2006).

On the contextual side, school environments that offer autonomy, participatory decision-making, and emotional support can significantly enhance LCT' sense of value and professional identity (Desimone, 2009; Kennedy, 2016). Conversely, organisational cultures that marginalise older teachers or limit their involvement in innovation can diminish motivation and increase feelings of obsolescence (Zhang et al., 2020). Collaborative, inquiry-oriented professional cultures have been identified as particularly effective in fostering sustained work engagement among LCT (Jansen in de Wal et al., 2020).

Importantly, personal and job resources do not operate in isolation; their interaction plays a decisive role in shaping professional experiences. Teachers with strong personal resources may still burn out in unsupportive environments, while even modest individual challenges can be buffered by a responsive organisational climate. Understanding this interplay is essential for identifying leverage points that can support LCT in sustaining their professional commitment while navigating the evolving demands of their roles.

These theoretical considerations are explored empirically through two complementary studies, presented in **Chapters 4 and 5**. **Study 3** investigates how personal resources interact with job demands and job resources to influence both work engagement and professional learning among LCT in early childhood education. Drawing on the Job Demands–Resources model, the study applies latent profile analysis to explore the existence of distinct subgroups based on combinations of personal resources, such as resilience, learning self-efficacy, future time perspective, and SOC strategies. These profiles are then integrated into a structural equation model to examine whether they moderate the relationship between job characteristics and professional outcomes. The objective is to understand how different resource profiles shape teachers' capacity to manage job demands and leverage available supports. **Study 4** complements this approach by adopting a qualitative, phenomenological perspective to explore how personal resources are managed and mobilised in daily professional life. The study examines how LCT interpret and respond to workplace

challenges, and how their personal capacities interact with institutional environments. Specifically, it aims to understand whether and how personal resources can buffer occupational stressors or enhance motivation, depending on the broader organisational and contextual supports. Together, these two studies contribute to a more fine-grained understanding of the conditions that sustain, or undermine, LCT' work engagement and development.

Key Challenge 4: Designing and evaluating interventions to support late-career teachers

While personal resources play a key role in shaping the everyday experience of LCT, these resources are not always organically present or equitably distributed. Therefore, the final challenge examined in this dissertation concerns the design and evaluation of targeted interventions aimed at strengthening LCT' well-being and work engagement.

As teachers progress in age, they may experience a decline in key cognitive and physical functions that are essential to managing the complex and evolving demands of early childhood education settings. Research suggests that LCT, like other aging professionals, often show reduced executive functioning, which can impair their ability to plan, organize, and adapt to new pedagogical or administrative tasks (Idowu & Szameitat, 2023). In parallel, lower levels of moderate physical activity and a gradual erosion of personal resources can further undermine their capacity to meet the increasing emotional and physical requirements of the role (Cheval et al., 2022; Baltes & Lang, 1997). As resource loss becomes more pronounced with age (Freund, 2008), effective strategies to maintain or enhance personal resources become increasingly important to sustain work engagement and well-being.

Despite this, targeted interventions aimed at supporting resource management among LCT in ECE remain limited. Studies to date have insufficiently explored how to strengthen personal resources in ways that are responsive to the specific conditions of ECE work (Jeon et al., 2017), and the promotion of psychological well-being in this sector continues to be largely overlooked (Randall et al., 2023). A review of interventions for older workers suggests that programs focusing on health and general well-being tend to be more effective than those aiming to modify workplace conditions alone (Poscia et al., 2016). Moreover, personal resources have been positively linked to work engagement across various professional contexts (Crawford et al., 2010), underscoring the value of investing in resource-centred approaches. However, as Guglielmi et al. (2015) argue, there remains a critical need for longitudinal research to assess the stability of work engagement over time. Understanding how engagement develops, and can be sustained, throughout the later stages of a teaching career is essential to evaluating the long-term effectiveness of such interventions and informing their future design.

Presented in **Chapter 6, Study 5** directly addresses this research gap by developing and implementing a resource-based training intervention tailored to the needs of LCT operating in ECE settings. This study evaluated the effects of a three-day training programme designed to strengthen key personal resources, resilience, self-efficacy in learning and development, occupational future time perspective (OFTP), and selection, optimisation, and compensation (SOC) strategies. The intervention aimed not only to equip teachers with tools to manage job pressures but also to foster deeper, more sustainable work engagement. Using a pre-post

control group design, the study assessed the medium-term effects of the training on participants' personal resources, work engagement, and psychological well-being.

2.4 Methodological approach

Given the differing objectives and epistemological orientations of the empirical studies presented in this dissertation, it is necessary to ground the research in a coherent methodological framework. This section therefore outlines the epistemological foundations that inform the investigation and clarifies how they guide the interpretation of the findings.

Locating research within a specific epistemological and methodological framework is a fundamental requirement in academic inquiry. A paradigm, as defined by Morgan (2007, p. 47), represents “the set of beliefs and practices that guide a field,” influencing both the questions posed and the methods employed to address them. Traditionally, research has been anchored in either the positivist paradigm, favouring quantitative methods, or the constructivist tradition, which aligns with qualitative inquiry. However, the dichotomy between these paradigms has led to longstanding debates regarding their compatibility (Bryman, 2007; Howe, 1985; Smith & Heshusius, 1986; Yanchar & Williams, 2006). Some scholars contend that this division creates a false opposition, restricting the potential for methodological synergy (Sandelowski, 2001). In contrast, others advocate for a more integrative approach that combines elements from different traditions to enhance the depth and applicability of research (Sale et al., 2002; Stevenson, 2005).

This dissertation embraces epistemological pluralism, which acknowledges the legitimacy and value of multiple ways of knowing (Miller et al., 2008). This approach is particularly relevant in interdisciplinary research, where combining perspectives from distinct epistemological traditions fosters a more comprehensive understanding of complex phenomena (Girod-Séville & Perret, 2012). Boon and Van Baalen (2019) illustrate how insights from different epistemic traditions, such as work psychology, which is largely positivist, and educational research, which tends to be more pluralistic, can be combined to provide a richer perspective on LCT’ experiences. By recognizing that no single epistemological stance can fully capture the complexity of professional learning and career sustainability, this study integrates various research traditions to bridge disciplinary divides.

Given this pluralistic stance, mixed methods research emerges as a particularly suitable approach, as it enables a more fine-grained exploration of research questions that cannot be fully addressed using either quantitative or qualitative methods alone (Creswell & Plano Clark, 2007). Often referred to as the “third paradigm” (Johnson & Onwuegbuzie, 2004), mixed methods research is grounded in pragmatism, which emphasizes methodological flexibility and practical problem-solving over rigid adherence to any one tradition. Pragmatists argue that research should be guided by the nature of the inquiry rather than by strict theoretical or methodological allegiance (Doyle et al., 2009). This stance allows researchers to move fluidly between inductive (qualitative) and deductive (quantitative) reasoning through a process of abduction, whereby hypotheses are continuously refined through iterative engagement with both data and theory (Morgan, 2007).

For this dissertation, the adoption of a mixed methods approach is essential to fully capture the complexity of late-career teachers’ professional learning experiences. As Creswell and Plano Clark (2007) argue, such an approach enables a more comprehensive understanding of

phenomena that cannot be adequately examined through a single methodological lens. By integrating quantitative measures, such as job demands, job resources, and personal resources, with qualitative insights drawn from lived experiences, perceptions, and coping strategies, this research produces a layered understanding of the conditions underpinning LCT' engagement and career sustainability. Grounded in epistemological pluralism, this approach reflects the study's commitment to both empirical rigour and contextual sensitivity. Rather than combining methods in a superficial way, it embraces the full integration of qualitative and quantitative components throughout the research process (Bryman, 2007; Hanson et al., 2005). This alignment between epistemology and methodology strengthens the internal coherence of the design, while also maximising the potential of each method. Mixed methods research, as defined by Tashakkori and Creswell (2007), involves not only collecting different types of data but also ensuring that each contributes meaningfully to the overall inquiry. In doing so, this dissertation aims to generate findings that are both statistically robust and grounded in the professional realities of late-career teachers.

By integrating quantitative data on job demands, job resources, and personal resources with qualitative insights into teachers' lived experiences, this dissertation adopts a mixed methods approach to capture the multifaceted nature of late-career teachers' professional experiences. The complexity of work engagement, professional learning, and well-being cannot be fully understood through a single methodological lens, as these constructs are shaped by a broad array of psychological, relational, and institutional factors that interact over time (Sale et al., 2002). A single-method approach would risk oversimplifying these dynamics or overlooking key patterns of divergence. Employing multiple research traditions enables the dissertation to combine objective measurements, such as standardised scales of job demands or self-efficacy, with the subjective narratives and sense-making processes of the teachers themselves. This dual focus ensures both breadth and depth in the analysis. Moreover, this methodological integration strengthens the relevance of findings for both theoretical advancement and practical implementation. On the one hand, it enriches our conceptual understanding of how late-career professionals mobilise resources to remain engaged. On the other, it offers empirically grounded insights that can inform policy design, professional learning, and support structures tailored to the evolving needs of experienced educators.

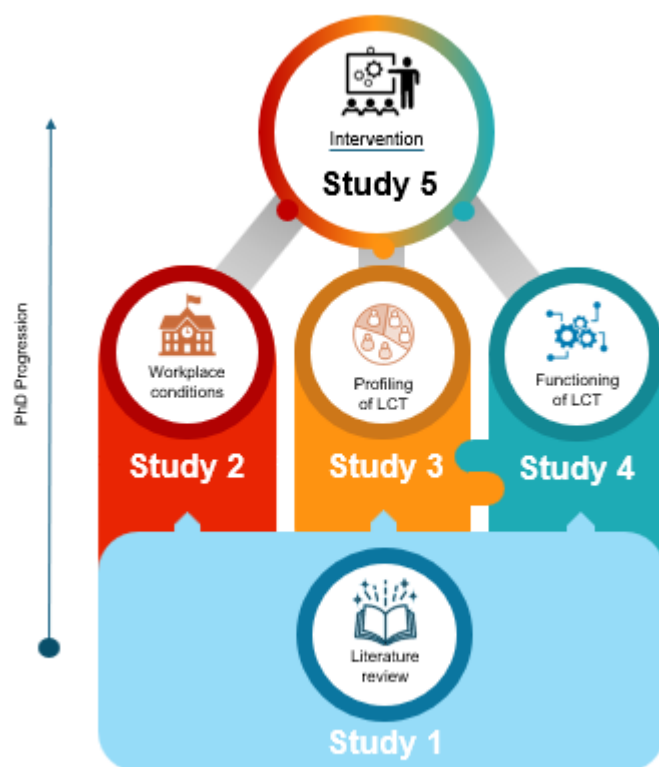


Figure 1. Schematic representation of the dissertation

Table 1. Synoptic table of the studies

Chapter and study	Key Challenge	Methodology	Key Contributions	Data, Sample
2 Study 1: Professional Learning of Late-Career Teachers – A Systematic Literature Review	1	Mixed-methods systematic literature review	Establishes a conceptual and empirical foundation, synthesizing definitions, learning activities, and key factors influencing LCT development.	4 databases, 42 articles
3 Study 2: Late-Career Teachers in ECE: A Qualitative Exploration of the Job Demands-Resources Model	2	Qualitative study using thematic content analysis	Highlights organizational and environmental factors that influence LCT work engagement, professional learning, and well-being.	Multiple-step semi-structured interviews, 24 LCT in Early Childhood Education
4 Study 3: Personal Resources at Work: Understanding Late-Career Teacher Profiles in ECE	3	Quantitative study using latent profile analysis and structural equation modelling	Identifies distinct LCT profiles and examines how personal resources buffer job demands while enhancing job resources.	Questionnaires, 180 LCT in Early Childhood Education
5 Study 4: Experiencing the Late-Career Phase - A Qualitative Inquiry Through the Lens of Teachers' Personal Resources	3	Qualitative phenomenological study	Provides an in-depth understanding of how LCT sustain work engagement and adapt strategies to navigate late-career challenges.	Multiple-step semi-structured interviews, 24 LCT in Early Childhood Education
6 Study 5: Trained to Thrive: Strengthening Personal Resources of Late-Career Early Childhood Education Teachers	4	Mixed-methods quasi-experimental study	Demonstrates the impact of a targeted intervention on strengthening personal resources and its impact on work engagement and well-being.	Questionnaires, 73 LCT in Early Childhood Education

PART II

Empirical chapters of the present dissertation

Chapter 2

Professional learning of LCT : A systematic literature review

Although professional development has been widely studied, the professional learning of late-career teachers (LCT) remains an underexplored area. This mixed-methods systematic review synthesises findings from 12 peer-reviewed studies published between 2000 and 2024, focusing on teachers aged 50 and above. The analysis, structured around the Job Demands–Resources model, examined how professional learning is defined, experienced and supported in the later stages of teaching careers. The findings revealed significant inconsistencies in how late-career teachers are defined, whether by age, experience or perceived expertise, highlighting the lack of a coherent conceptualisation for this group. Similarly, professional learning was operationalised in various ways across studies, ranging from formal, structured programmes to informal, workplace-embedded practices. The review identifies late-career teachers’ preference for socially embedded and collaborative learning opportunities, such as mentoring, dialogue and reflective practice. However, mentoring late-career teachers is typically seen as a one-way relationship where only the mentee learns, rather than as a shared learning experience in which both mentor and mentee grow together. Using the Job Demands–Resources framework, the review categorises key job demands (e.g., workload, role ambiguity) and resources (e.g., collegial support, autonomy, self-efficacy) that influence late-career teachers’ engagement in learning. It highlights a notable gap in tailored interventions addressing their specific needs. The review concludes with both theoretical and practical implications, advocating for more nuanced, context-sensitive approaches to professional learning that value the continued growth, contributions and well-being of teachers in the later stages of their careers.

Keywords: Late-career teachers, teacher professional learning, job demands-resources model, systematic literature review

Référence

Brouhier, Q., März, V., & Raemdonck, I. (submitted). *Professional learning of LCT: A systematic literature review*.

Professional learning of LCT: A systematic literature review

1. Introduction

In light of growing teacher shortages worldwide, educational systems are increasingly focused not only on recruiting new staff, but also on retaining currently employed professionals across all career stages. Sustaining the engagement and effectiveness of experienced teachers has become a critical priority, particularly as demographic shifts have led to an aging teaching workforce and a decline in the number of new teachers entering the profession (Organization for Economic Co-operation and Development, 2019). These developments are further shaped by rising life expectancy, higher statutory retirement ages and stricter early retirement regulations in many countries (Jakovljevic et al., 2021). Keeping late-career teachers (LCT) professionally active is now essential to ensuring institutional stability and pedagogical continuity.

However, working longer is not without challenges. LCT often face increased risks of burnout, emotional fatigue and premature exit from the profession (Garcia-Arroyo et al., 2021; Ozamiz-Etxebarria et al., 2023). These difficulties are compounded by the complex and evolving nature of today's school environments, characterised by constant educational reform, rapid technological developments and growing social expectations (Heffernan et al., 2022; Organization for Economic Co-operation and Development, 2025). Despite their experience and contributions, many LCT struggle to maintain motivation and well-being in the face of such systemic demands (Brouhier et al., 2023).

In this context of accelerated change, sustained participation in professional learning is widely recognised as a key factor in supporting teacher engagement, effectiveness and adaptability (Admiraal et al., 2019; Ben-Peretz et al., 2018). Lifelong learning has become central to educational policy across Europe (European Commission, 2002), yet engagement among LCT remains uneven. Research has suggested that institutional support is often lacking, and LCT may face both practical and psychological barriers to participating in professional development (Eros, 2011; S. Zhang et al., 2020). Stereotypes portraying LCT as resistant to change or less capable of learning still persist (Gore & Rickards, 2021), despite evidence of their professional competence and willingness to grow (Orland-Barak, 2014).

In recent years, growing policy and research attention in many countries has been directed toward the importance of lifelong learning for teachers. Previous research has underscored the role of continuous professional learning in enhancing educational quality (Louws et al., 2017). However, the infrastructure needed to make such learning consistently accessible, sustained and meaningful remains unevenly developed across countries (Boeskens et al., 2020; European Commission, 2020). This is especially evident for LCT, who frequently receive less targeted support despite their key role in sustaining pedagogical stability and mentoring younger colleagues. While some systems, such as those in parts of Australia and selected U.S. states, have embedded professional learning into their career progression frameworks (e.g. Baker et al., 2018; Jaquith et al., 2011), participation in many European countries remains voluntary and inconsistently supported at the school level. Previous

research has suggested that the engagement of LCT in professional learning is shaped by both workplace conditions and personal motivational resources (e.g. Admiraal et al., 2019; Jansen in de Wal et al., 2020). Yet, the ways in which these teachers interpret these conditions and respond to evolving learning demands remain insufficiently examined, particularly in light of persistent structural barriers (Gore & Rickards, 2021). In addition, recent scholarship has stressed the need for an intersectional perspective when examining how these structural and motivational factors shape the experiences of LCT, acknowledging the interplay of multiple identities and structural conditions (Marcus, 2022).

To explore how these structural and motivational factors interact, the present study draws on the Job Demands–Resources (JD–R) model (Bakker & Demerouti, 2017). This framework distinguishes between job demands (e.g., workload, emotional strain), job resources (e.g., autonomy, collegial support) and personal resources (e.g., self-efficacy), offering a comprehensive view of the mechanisms that influence teacher engagement and professional learning. The JD–R model is particularly well-suited to the teaching profession, providing a valuable lens for understanding how LCT manage their development in environments that can either constrain or facilitate learning opportunities (Brouhier et al., 2023; Raemdonck et al., 2022). In adopting this lens, the present study addresses a critical research gap by focusing on the conditions that enable or impede teachers’ meaningful engagement in learning during the later stages of their professional careers.

1.1 Previous reviews on late-career teachers

Two pertinent literature reviews, both published prior to the present research, have explored either LCT or teacher professional learning individually. However, no specific literature review was identified that directly examined the intersection of these two areas. The first review, conducted by Postholm (2012), investigated how experienced teachers engage in learning throughout their careers and apply this learning to support pupils’ academic development. This theoretical article, based on a search of the ISI Web of Science database, reviewed 31 articles published between 2009 and 2011. Postholm highlighted the importance of collaboration with colleagues and school leaders as a vital form of social learning for experienced teachers, which in turn enhances teaching practice and benefits pupils’ learning. The article also emphasised the significance of one particular job resource: the capacity of schools to create either structured or semi-structured opportunities for sharing problems and practices, with joint reflection identified as an essential driver of professional learning.

The second review, conducted by Torenbeek and Peters (2017), synthesised research on the attrition and effectiveness of teachers with over 20 years of experience. Using the JD–R model, the authors categorised the specific demands and resources encountered by experienced teachers. They documented perceived job demands, such as disruptive student behaviour, high workload, evolving teaching roles and additional out-of-classroom responsibilities. Key job resources included social and leadership support and an innovative climate, while personal resources, such as perceived control and self-efficacy, were also considered crucial for professional sustainability. The authors underscored the scarcity of studies addressing organisational commitment among LCT and highlighted the need for further examination of personal resources within this context.

2. Theoretical framework

The Job Demands–Resources (JD–R) model (Bakker & Demerouti, 2017) provides a robust and flexible framework for analysing how workplace conditions affect teachers' professional learning (TPL). By emphasizing the interplay between job demands, job resources and personal resources, the model captures the complex factors shaping engagement in professional learning. Research has shown that certain job demands, such as task complexity, can serve as motivational drivers, encouraging the development of new skills and strategies (LePine et al., 2005), while job resources, such as autonomy, feedback and collegial support, create enabling conditions for sustained learning (Evers et al., 2016). This dynamic, bidirectional relationship positions workplace learning as an active, context-sensitive process rather than a passive reaction to external pressures. The model's relevance is especially evident in teaching, where balancing increased responsibilities with adequate support is essential for sustaining growth and motivation throughout one's career (Granziera et al., 2021).

The JD–R framework also aligns conceptually with key findings in TPL research, particularly those regarding engagement, motivation and proactivity. Engagement is widely recognized as a driver of learning and achievement (Greene, 2015; Pekrun & Linnenbrink-Garcia, 2012), and more recent research has emphasized a "person-in-context" approach that highlights the interaction between individual and environmental factors (Schmidt et al., 2018). This perspective closely mirrors the JD–R model's core assumptions. Furthermore, theories of job crafting and active learning suggest that employees who proactively engage in learning also shape their own work conditions, thereby reinforcing a virtuous cycle of motivation and development (de Lange et al., 2010; F. Zhang & Parker, 2019;). In the teaching profession, this self-sustaining cycle not only supports teachers' ongoing development, but also benefits student outcomes, as teacher well-being and growth have been shown to positively influence their classroom practices (Jeon et al., 2019). Finally, professional development programmes play a central role in supporting teachers' capacity to navigate job demands, manage stress and respond effectively to learners' needs (Smith & Lawrence, 2019), making the JD–R model an especially suitable lens for examining TPL processes. The following sections present the two analytical frameworks used in this study.

2.1 JD-R model

In the past, numerous theories about work-related stressors and well-being have been developed, in which causes and outcomes are conceptually integrated and ordered into a causal pattern of relationships. Among them, the JD–R model, developed by Demerouti et al. (2001), emphasizes the effect not only of demands, but also of resources on employees' professional learning and development. This framework has also been applied to the teaching profession (see Dicke et al., 2018). According to the model, each organization has its own specific circumstances and risks that are associated with job-related benefits or stressors. The model divides these work characteristics into two sets: job demands and job resources. *Job demands* refer to physical, cognitive and emotional efforts or skills that are associated with physiological and/or psychological costs and are required as part of the job. *Job resources* refer to physical, psychological, social or organizational aspects of the work environment that are functional for achieving work goals and reduce job demands and their associated physiological and psychological costs (Bakker et al., 2023). Both job resources and job

demands can stimulate personal growth, learning and development to some extent (Evers et al., 2016). Two independent processes are at play in the JD–R model and both play a role in the development of strain and exhausting conditions or well-being and work engagement. In the first process, chronic job demands drain employees' mental and physical resources and may lead to depletion of energy and health problems. The second process, whereby resources have a motivational potential even under higher demands, leads to high work engagement, low cynicism, personal growth and good performance (Bakker & Demerouti, 2017).

An important extension of this model concerns the inclusion of *personal resources*, which consist of individuals' sense of their abilities to successfully control and have an impact on their environment (Hobfoll et al., 2003). Most behavioural theories assume that human behaviour results from an interaction between personal and environmental factors (Demerouti et al., 2001). People seek to obtain, retain and protect resources, and stress occurs when these resources are threatened (Hobfoll, 2002). Personal resources can therefore fulfil a central motivational role (Xanthopoulou et al., 2007) and have an important function in participation in professional development activities (Brouhier et al., 2023; van der Heijden et al., 2015). When confronted with age-related changes, maintaining these personal resources might be very important for LCT (Carstensen & de Lang, 1996), even more in an activity such as teaching, where the quality of the performance greatly depends on the teacher's mood (Ariza-Montes et al., 2016).

2.2 Teacher professional learning

TPL is widely recognised as a cornerstone of educational quality, influencing both instructional practices and teacher retention (Koerber et al., 2023; Mertler, 2016). In the literature, TPL is broadly understood as encompassing a range of activities or experiences, both individual and collaborative, through which teachers acquire and develop professional knowledge, skills and dispositions (Avalos, 2011). Evers et al. (2016), building on Kwakman's (2003) earlier framework, proposed five theoretical dimensions of professional learning that reflect the diverse ways teachers engage in development: (1) keeping up to date with new knowledge, (2) experimenting with practice, (3) reflecting and seeking feedback, (4) collaborating with colleagues for lesson improvement and (5) contributing to school-wide development. This multidimensional approach captures the complex and iterative nature of teacher learning.

To further conceptualise how learning occurs, previous research has expanded the scope of TPL to include both formal and informal dimensions. Kyndt et al. (2016) advocated viewing professional learning as a continuum, rather than a dichotomy. While traditional forms of learning were confined to structured, external training sessions, informal learning, emerging organically through daily work practices and social interactions, is now recognised as equally significant (Smet et al., 2022). This view was echoed by Enthoven et al. (2024), who conceptualised professional learning as a 'landscape' shaped by teachers' movement across multiple communities of practice. Learning thus emerges as a participatory and situated process, rooted in ongoing professional engagement rather than discrete events.

This shift toward a broader, more situated understanding of professional learning also mirrors deeper epistemological tensions in the literature. While some traditions emphasise measurable outcomes and causal relationships, others prioritise the complexity of teachers' lived experiences and the evolving nature of their professional identities. Evans (2023)

highlighted a key divide: While North American studies often adopt a causality-driven lens, linking TPL with student achievement (e.g., Darling-Hammond et al., 2017; Patfield et al., 2022), European scholars argue for a more nuanced understanding that accounts for the complex, non-linear nature of teacher learning (Attard, 2017; Osborne et al., 2019). Anticipating some of these concerns, Kennedy (2016) advocated for a shift toward teacher-centred approaches that foreground professional agency, identity and the intrinsic value of learning for teachers themselves.

To respond to this diversity and complexity, recent conceptualisations have proposed moving beyond linear models of professional development. Enthoven et al. (2024), for example, described TPL as a ‘learning landscape’, a dynamic and context-sensitive process shaped by participation in multiple communities of practice. Within this view, learning is not restricted to discrete events but unfolds continually through meaningful engagement in work. The present review embraces this perspective by adopting both the five-dimensional model of Evers et al. (2016) and the formal–informal learning continuum developed by Kyndt et al. (2016). Together, these frameworks provide a comprehensive lens for identifying the learning activities of LCT, who often navigate diverse and overlapping forms of learning across the career span.

By integrating these conceptual tools, the study examines not only the nature and forms of TPL, but also the contexts in which it occurs, ranging from formal training to informal workplace learning. Given the importance of learning through everyday practice and the relative paucity of research on how LCT experience such learning, this systematic literature review focuses specifically on teachers aged 50 and above. It seeks to synthesise current findings and identify future research directions by addressing the following research questions:

1. How have LCT been defined in the literature?
2. What constitutes professional development of LCT? In what types of learning activities do they engage?
3. In terms of the JD–R model, what job demands have been reported as impediments to and motivators of learning? What personal resources and job resources contribute to the learning and professional development of LCT?
4. What outcomes have been examined in relation to professional learning by LCT?

3. Methods

3.1 Mixed methods systematic literature review

By including different forms of evidence from both qualitative and quantitative studies, this review followed the principles of mixed-methods systematic reviews. In this regard, Sandelowski et al. (2012) outlined a general framework for mixed-methods systematic reviews, identifying several possible synthesis designs. Among these, this study adopted what Heyvaert et al. (2016) refer to as a *single data-based convergent synthesis design*, an integrated methodology that assimilates qualitative and quantitative data into a single dataset, analyses them using the same method (typically thematic or content analysis), and reports the results jointly (Noyes et al., 2019). To operationalise this design, the procedures described by Pearson et al. (2015) were applied. These recommend transforming quantitative findings

into qualitative themes through data extraction and coding. This process aligns with the meta-summary technique outlined by Sandelowski and Barroso (2003) and further refined by Draucker et al. (2009), whereby all data, regardless of origin, are synthesised narratively and thematically. Furthermore, consistent with the typology developed by Sandelowski et al. (2012), this review adopted a study-level rather than a participant-level approach. As these authors noted, qualitative findings are typically reported at the study level, with emphasis on thematic and interpretive syntheses rather than frequency counts or cross-participant comparisons (p. 228). Consequently, the integration of qualitative and quantitative findings in this review also occurred only at the study level.

3.2 Literature search and screening

This research followed the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines to improve the reporting of the literature review (Rethlefsen et al., 2021), and used a four-phase flow diagram (Moher et al., 2009). The present research focused on literature from four electronic databases (Eric, PsycInfo, Scopus and Francis), considered as most relevant in educational research. Literature searches were carried out between April and June 2024. Keywords identified for the search categories were “late-career teachers” and “professional development” (plus the derivative terms). The time boundaries for publications whose titles, abstracts or keywords contained these terms were between 2000 and 2024. We opted for this specific timeframe, as learning and development (i.e., lifelong learning) in the teaching profession has become a predominant issue in the educational context since the acceptance of the Lisbon Agreements (Education Commission, 2002) and since it was identified as a key mechanism for improving classroom instruction and student achievement (National Commission on Teaching and America’s Future, 1996).

During the first stage of the study, research syntaxes were formulated by expert librarians (see Appendix A for our research syntaxes). Studies were included if they met the following criteria: publication source (peer-reviewed academic journal), the nature of the study (empirical), the relevance of the topic (relating in a direct or implicit way to older teachers and professional development) and the nature of the sample (teacher sample aged 50 years or older, having equal to or greater than 20 years of experience). In the same vein, the exclusion criteria eliminated studies concerning student and pre-service teachers; research on higher education and special education was excluded, to focus on pre-school, primary and secondary education. Conference papers, national and international reports, conference proceedings, books, book chapters, and grey literature were also excluded. The inclusion and exclusion criteria defined for the selection of articles are presented in Table 2

Table 2. Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
1. Topic alignment with the RQs: The articles should be relevant for the features that characterize the professional learning of teachers with more than 19 years of experience AND aged 50 years old or more.	Out of the scope of the RQs

2. Publication type: All articles should be peer-reviewed journal articles.	Non peer-reviewed or non-article
3. Language: All articles should be written in English	Articles not written in English
4. Context: All in-service teachers, corresponding to Criterion 1, working with non-adult students from kindergarten to secondary education were eligible for this research.	Teachers in higher education
5. Time period: Articles published between 2000 and 2024	Articles published before 2000

Out of the initial 4,276 hits, one researcher (Author 1) removed the duplicates and scrutinized the titles and abstracts of the remaining 3,632 to determine which studies appeared to meet the inclusion criteria. Based on the literature search, numerous articles were identified in which LCT were included as part of a broader group of experienced teachers. However, these articles often did not specifically address the particularities of LCT and their learning processes, and were therefore excluded from the final selection. This first stage resulted in 292 eligible hits. To assess the reliability of the screening process, Authors 2 and 3 independently reviewed a random sample of 10% of the titles and abstracts, blinded to each other decisions. Interrater agreement was assessed using Cohen's kappa method, a widely recommended coefficient for evaluating coder reliability (Park & Kim, 2015). The level of agreement was satisfactory ($k = 0.72$), supporting the reliability of the initial screening, which was therefore retained without further discussion of discrepancies.

Next, all 292 retained records underwent full-text screening, conducted by Authors 1, 2 and 3. This second round of screening took place after an initial eligibility review. During this phase, a critical appraisal procedure was followed to assess the quality and eligibility of the articles found. The QARI instruments, developed by the Joanna Briggs Institute (Lockwood et al., 2015) were chosen for their clarity and ease of use (Majid & Vanstone, 2018). Studies scoring 5 or below on the QARI checklist were excluded. It is important to note that a low score did not necessarily indicate methodological weakness; in most cases, it reflected a lack of explicit reporting, for instance, missing details about ethical procedures or researcher-participant relationships. Following this appraisal process, 6 studies were retained for final inclusion in the synthesis

In a subsequent phase, a manual search of the reference lists of key studies was performed (Bryman, 2012) to identify additional relevant articles. This supplementary step focused on studies that linked terms such as 'older teachers' with the concept of 'learning and development', and that met the four inclusion criteria. It yielded six additional studies not captured in the initial database search, so that a total of 12 articles were included in the review. The full selection process is illustrated in Appendix B.

3.3 Data extraction and analysis

The content of the articles was extracted in accordance with Pickering and Byrne's (2014) recommendations; an Excel spreadsheet was used to detail two types of extracted information. First, the contextual data allowed us to conduct a descriptive analysis and to incorporate each study in a summary table specifying the focus, the characteristics of the sample, the methods used and the main findings (see Table 2). Second, data related to the research focus were extracted through a thorough reading of the full-text articles, with particular attention given to elements aligned with the three components of the JD–R model. Job demands, as well as the contextual and individual resources identified in both qualitative and quantitative studies, were coded using a common framework. The JD–R model served as a guiding structure for categorizing the data and constructing a meta-summary, with the aim of mapping the demands and resources found in the selected studies to prompt continuous professional learning.

Table 3. Overview of the selected articles

N	Authors	Country	Methods	School level	Label	Definition	TPL activities
1	Brouhier et al. (2021)	Belgium	Mixed Methods	Secondary	End-of-career teachers	More than 55	Networks of professional learning
2	Brouhier et al. (2023)	Belgium	Quantitative	Preschools	LCT	More than 50 years old and with more than 20 years of practice	Measuring engagement in TPL activities
3	Gore & Rickards (2021)	Australia	Qualitative	Primary	Teachers in late phase	More than 19 years of practice	Quality Teaching rounds
4	Hargreaves & Elhawary (2019)	Egypt	Qualitative	Primary	Senior teachers	No precise description	Teacher learning communities
5	Hollweck (2019)	Canada	Qualitative	All school levels	Veteran teachers	Min. 8 years of experience as mentor	Mentoring-coaching
6	Iancu-Haddad & Oplatka (2009)	Israel	Qualitative	All school levels	Teachers in late career stage	Over 55 years old	Mentoring
7	Leite et al., (2022)	Finland	Mixed Methods	All school levels	Experienced teachers	From 19 to 30 years of practice	Informal – pupil interactions
8	Meister (2010)	USA	Qualitative	Secondary schools	Experienced teachers	Ranging from 21 to 28 years of practice	Perceptions of their accumulated skills
9	Monteiro et al. (2020)	Portugal	Qualitative	All school levels	Veteran teachers	Ranging from 50 to 62 years old and with 20 years of practice	Digital technologies practices
10	Morcom & MacCallum (2022)	Australia	Qualitative	All school levels	Experienced teachers	More than 25 years of practice	Mentoring
11	Robinson (2020)	Australia	Qualitative	Secondary schools	Super veteran teachers	Over 30 years of practice	Perceptions of their TPL
12	Snow-Gerono (2009)	USA	Qualitative	Preschool and primary	Veteran teachers	No precise description	School-University Partnership

4. Results

4.1 Descriptive analysis

The final corpus for analysis comprised 12 peer-reviewed articles published between 2000 and 2024, sourced from 11 academic journals and covering research conducted in eight different countries. Most studies originated from Europe ($n = 5$) and North America ($n = 3$). In terms of methodology, nine studies employed qualitative designs, one adopted a quantitative approach and two used mixed methods. The sample sizes varied considerably, ranging from 4 to 300 LCT. All school levels were represented in the dataset. Notably, five studies examined teacher learning across grades K-12, rather than focusing on a single school level. Three studies concentrated on secondary education, two on primary education, one on preschool and one on preschool and primary.

Based on the research questions guiding this systematic review, three major areas were identified to structure the analysis: (1) the underlying conceptualisations used to define this teacher cohort (see Section 4.2); (2) the learning opportunities and activities LCT engaged in, shaped by contextual elements that either facilitated or hindered their professional learning (Section 4.3); and (3) the development of an analytical model to consolidate insights from the selected literature. This model serves as the foundation for the narrative synthesis illustrated in Figure 2, which uses the JD–R framework as a lens for analysis (Section 4.4).

4.2 Defining LCT

The selected studies used a variety of terms to describe teachers in the later stages of their careers, reflecting an overall lack of terminological consensus in the literature. Among the 12 reviewed articles, four referred to these teachers as “veteran” or “super veteran teachers” (Hollweck, 2019; Monteiro et al., 2020; Robinson, 2020; Snow-Gerono, 2009), three used the label “experienced teachers” (Leite et al., 2022; Meister, 2010; Morcom & MacCallum, 2022) and another three adopted the term “late-career” (Brouhier et al., 2021, 2023; Iancu-Haddad & Oplatka, 2009). Other descriptors included “senior teachers” (Hargreaves & Elhawary, 2019), “teachers in the late phase” (Gore & Rickards, 2021) and “end-of-career teachers” (Brouhier et al., 2021).

To better understand how these terms were operationalised, we examined the inclusion criteria across the studies. Two main approaches emerged: years of experience and chronological age. Experience-based thresholds ranged widely, from as few as 8 years of experience as a mentor (Hollweck, 2019) to over 30 years of service (Robinson, 2020). Several studies defined LCT as those with 20 or more years of experience (Monteiro et al., 2020; Morcom & MacCallum, 2022; Snow-Gerono, 2009), while others included teachers with experience ranging from 19 to 30 years (Leite et al., 2022) or 21 to 28 years (Meister, 2010). A few studies used both age and experience criteria. For instance, Brouhier et al. (2023) included teachers over 50 years old with more than 20 years of practice, while Monteiro et al. (2020) targeted teachers 50 to 62 years old with at least 20 years of experience. Chronological age alone was used in three studies, with cut-offs set at over 50 (Gore & Rickards, 2021), over 55 (Iancu-Haddad & Oplatka, 2009) and between 55 and 65 years old (Brouhier et al., 2021).

These definitional discrepancies reflected deeper theoretical divergences in how LCT were categorised. Of the 12 studies reviewed, only a minority explicitly grounded their definitions in established theoretical models. A primary conceptual framework invoked was Huberman's (1989) model of career development, which distinguishes between phases such as "serenity" (typically between 19 and 30 years of experience) and "disengagement" (31-40 years), associated respectively with professional confidence and reflective distancing. This model was used by Gore and Rickards (2021) and Brouhier et al. (2023) to define the late-career phase as based on career stages rather than strictly chronological age.

Other studies, such as Robinson (2020), drew on the five-phase structure proposed by Baker (2005), which includes stages of reassessment (43-53) and proximate retirement (54+), while Meister (2010) referenced Lieberman and Mace (2009, as cited in Meister, 2010) to conceptualise professional development. However, the majority of studies, including Morcom and MacCallum (2022), Leite et al. (2022), Monteiro et al. (2020), Snow-Gerono (2009) and Iancu-Haddad and Oplatka (2009), did not explicitly ground their definitions in theory. These studies defined LCT either pragmatically (e.g., based on years of experience or age thresholds) or relied on recommendations from school leaders or practical inclusion criteria without conceptual anchoring.

In contrast, Hargreaves and Elhawary (2019) and Hollweck (2019) acknowledged that their categorisations were not theoretically grounded. This inconsistency highlights the need for greater conceptual clarity in future research. Some authors have argued for hybrid definitions that combine age and experience (e.g., Brouhier et al., 2023), to more accurately reflect the diversity of professional experiences and avoid equating chronological age with pedagogical expertise. Others caution against reifying generational labels, noting that professional identity and career stage are shaped by contextual, policy-related and individual factors beyond age alone (Tempest, 2003).

4.3 Exploring professional learning of LCT

Following the exploration of the key dimensions of late-career teaching as outlined in the literature, this section addresses the second research question by examining the types of professional learning activities undertaken by LCT. The studies reviewed reveal a rich variety of professional learning practices among LCT, with a notable emphasis on informal, practice-embedded forms of development. Drawing on the frameworks of Evers et al. (2015) and Kyndt et al. (2016), these activities can be organised into formal and informal types of learning, as detailed in Table 3. Informal, workplace-embedded activities emerged as particularly prominent across the corpus. Many LCT engaged in peer dialogue and critical reflection with colleagues (Meister, 2010; Monteiro et al., 2020) or actively contributed to their professional communities through joint lesson planning or peer tutoring (Leite et al., 2022; Morcom & MacCallum, 2022). Mentoring relationships also served as key learning contexts, where LCT developed alongside their mentees, enhancing mutual reflection and pedagogical renewal (Hollweck, 2019; Iancu-Haddad & Oplatka, 2009). In Snow-Gerono's (2009) study, for instance, triadic mentoring within Professional Development Schools created cross-generational partnerships that deepened school-level capacity, supporting schools committed to the acquisition and sharing of knowledge among all members of the educational community and relying on research-practitioner collaboration. These socially embedded forms of learning, situated in trust-based collegial relations, were often viewed by

participants as more authentic and motivating than top-down programmes. Notably, feedback-seeking and experimentation with new strategies (e.g., Gore & Rickards, 2021) often occurred informally, reinforcing the embedded and adaptive nature of LCT professional learning.

Formal learning activities, though less frequently cited, also played a role. These included participation in structured training, such as subject-specific workshops or conferences (Hargreaves & Elhawary, 2019; Monteiro et al., 2020), and involvement in system-wide initiatives such as professional development school programmes (Snow-Gerono, 2009). For example, some LCT attended formal courses focused on classroom management, digital integration or instructional design (Gore & Rickards, 2021), while others participated in externally facilitated peer coaching models (Leite et al., 2022). However, the value of these formal opportunities was often linked to their alignment with teachers' real-life classroom contexts and their integration with collaborative practice. In several studies, teachers emphasised the importance of opportunities to reflect with colleagues after formal training (e.g., Monteiro et al., 2020), underscoring the role of informal processes in consolidating formal learning. Mentoring, too, straddled the boundary between formal and informal learning: while it might be part of institutional programmes, it remained rooted in personal relationships and contextual negotiation (Iancu-Haddad & Oplatka, 2009).

Table 4. Types and frequencies¹ of professional learning activities, adapted from Kyndt et al. (2016) and Evers et al. (2016).

	Category	f	Activity
Formal	Professional development programmes	4	Participating in a school learning activity, taking part in (online) professional training or course organised by experts (role plays, examining video footage of teaching); Attending seminars and workshops related to all aspects of teaching (classroom management, disciplinary contents, assimilation in ICT, etc); Participating in a PDS programme
	Receiving structural coaching	1	Receiving coaching, participating in peer coaching with colleagues
	Attending a professional conference	1	Attending an educational conference and engaging in conference presentations or sessions
	Participating in formal teacher collaboration	1	Forming school-based working groups (e.g., subject-specific teams), actively participating in collaborative discussions and cross-school meetings
Informal	Core instructional practices with students	1	Joint-class sessions, co-teaching, "team-teaching", "learning by doing"
	Interaction, discussion, collaboration and sharing with others	12	Collaborating, receiving feedback (from colleagues and students as PD collaborators), reflective dialogue with colleagues on educational issues, curriculum, student development and instruction
	Engaging in tasks, roles and extracurricular activities	3	Taking a leadership role, coordinating and organising, coaching/mentoring colleagues and student teachers
	Consulting (offline/online) information sources	1	Undertaking self-directed learning via reading, research and (online) investigation
	Experimenting and innovating	3	Experimenting new methods and materials in classrooms
	Reflection and evaluation	3	Reflecting on pedagogical issues, inviting colleagues to attend a lesson, filming a lesson to get evaluated

4.4 Structuring the analysis with the JD-R model

To address the third research question, an analytical model was developed based on the JD–R model, allowing for a narrative synthesis across the selected literature. This model provides a structured lens through which to interpret the findings of a predominantly qualitative and descriptive body of research, supplemented by a smaller number of quantitative investigations focused on TPL among LCT. In most of the selected studies, TPL was explored

¹ Each type of learning activity mentioned in the selected articles counts as one in Table 4.

in terms of its effects on engagement, sense of identity and professional competence for LCT, thereby situating learning as a product of broader contextual dynamics. In terms of job demands, several studies reported time constraints and role overload as critical challenges. Monteiro et al. (2020) and Iancu-Haddad and Oplatka (2009), for example, discussed how increasing responsibilities, especially in mentoring, can lead to emotional strain, limiting opportunities for self-directed development. Meister (2010) and Leite et al. (2022) also noted that institutional constraints, such as inflexible schedules or administrative burdens, often hinder participation in peer learning communities or reflective dialogue, thereby diminishing the perceived value and feasibility of continual professional learning in later career stages.

Job resources were available at both the school and class levels. Organisational structures such as Professional Development Schools (Snow-Gerono, 2009) offered LCT formal platforms for peer collaboration, mentorship and pedagogical innovation. At the interpersonal level, collegial relationships were essential in maintaining professional vitality. Studies by Hollweck (2019), Morcom and MacCallum (2022) and Hargreaves and Elhawary (2019) highlighted the role of mentoring and mutual support in building trust, promoting emotional safety and encouraging shared growth. In such environments, LCT were more likely to experiment with new practices, reflect critically on their experiences and contribute to collective learning. Personal resources also emerged as key determinants of engagement. Brouhier et al. (2023) identified the impact of self-efficacy, resilience and goal orientation on participation in TPL, while Gore and Rickards (2021) showed that a sense of purpose was often rekindled for LCT through their mentoring roles, which provided opportunities to reaffirm their expertise and support institutional continuity.

Nevertheless, the JD-R model did not fully account for the relational and systemic factors that shaped learning over time. Several studies emphasised the role of intergenerational collaboration as a key enabler of continued engagement by LCT. In the work by Hargreaves and Elhawary (2019), reciprocal feedback, co-reflection and role modelling were seen to foster knowledge exchange and professional renewal. These practices also counteracted feelings of marginalisation and maintained a sense of belonging. Institutional recognition, supportive leadership and policy alignment further influenced participation by LCT by legitimising their learning needs and creating enabling environments. The literature thus points to the importance of understanding TPL not as an isolated act of personal initiative, but as a systemic process embedded in broader educational ecosystems. Meaningful professional learning for LCT requires attention to structural, cultural and interpersonal conditions that support sustained development and meaningful contribution in the final stages of the teaching career.

While the preceding analysis focused on how workplace conditions, namely, job demands and resources, and personal resources shaped participation by LCT in professional learning, a closer reading of the selected studies revealed a more nuanced theoretical insight. Beyond its function as an outcome influenced by these factors, TPL was also portrayed in several contributions as a valuable resource in itself, one that reinforces motivation, identity and long-term engagement. Although TPL was predominantly conceptualised as an *outcome* in the reviewed literature, that is, as something shaped by individual, relational and organisational factors, several studies also emphasised its role as a *resource* that actively contributes to sustaining motivation, engagement and professional identity in the later stages of a teaching career. For instance, in the study by Iancu-Haddad and Oplatka (2009),

mentoring was not merely a task imposed on senior teachers, but a meaningful opportunity for reflection, identity affirmation and emotional renewal. Teachers involved in mentorship roles reported feeling valued and revitalised by the experience, particularly when it was framed as a legacy-building practice. Similarly, Gore and Rickards (2021) found that the Quality Teaching Rounds programme fostered renewed pedagogical enthusiasm and a sense of professional agency among teachers with over 19 years of experience. Through structured peer observation and collaborative dialogue, LCT described experiencing a “reawakening” of their instructional purpose, suggesting that the act of learning itself functioned as a psychological and motivational resource.

This dual conceptualisation, viewing TPL as both resource and outcome, was also present in studies such as Hollweck (2019) and Morcom and MacCallum (2022), where peer coaching and mentoring relationships were shown to foster mutual growth. In these contexts, professional learning emerged not as a top-down obligation, but as a socially embedded process through which teachers cultivated trust, resilience and adaptive capacities. Even informal learning, as observed in Meister (2010), took on a restorative role: Seasoned educators reflected on the depth of their accumulated expertise and found meaning in collegial conversations and ongoing commitment to student development. Conversely, when opportunities for development were limited or poorly structured, as in the study by Monteiro et al. (2020), where digital transitions created stress rather than growth, TPL risked becoming an additional demand rather than a sustaining resource. Recognising this bidirectional relationship between professional learning and engagement is essential for educational policy and practice. It implies that designing meaningful, accessible learning opportunities is not merely a professional obligation, but a strategic lever for promoting retention, well-being and instructional quality in the later phases of teaching careers.

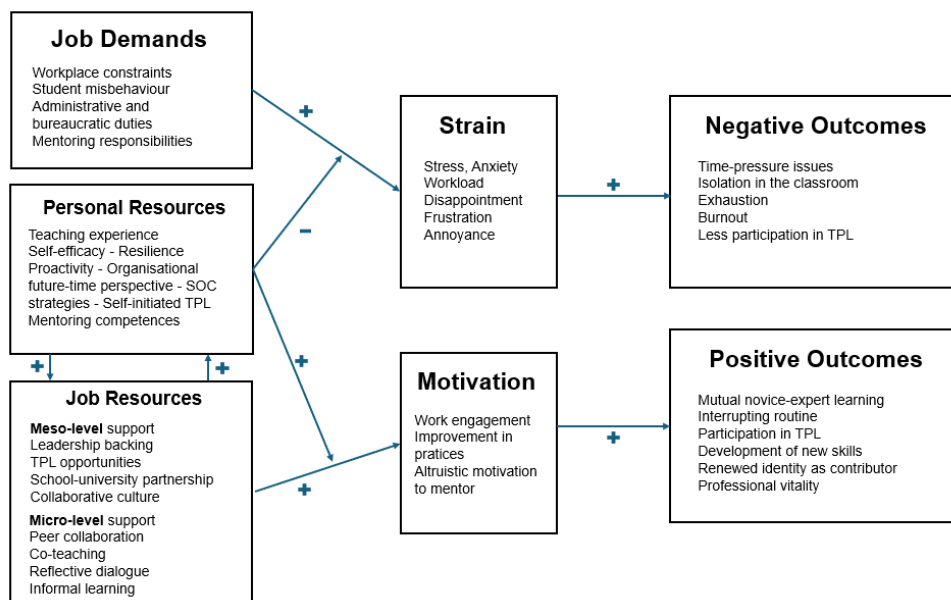


Figure 2. Meta-summary using the JD-R

5. Discussion

This systematic review explored the prevailing **definitions and representations** of LCT in the educational literature, the nature of their professional learning activities and the contextual and personal factors shaping their engagement. Drawing on the JD–R model, the analysis revealed both a definitional ambiguity and a conceptual evolution in understanding TPL: While most studies treated it as an outcome of workplace conditions and personal capacities, several contributions also framed it as a resource, one that sustains motivation, engagement and identity in later career stages. These findings underscore the complex, bidirectional relationship between teacher learning and well-being, and call for a more dynamic and situated understanding of professional development in the final phases of a teaching career.

5.1 Conceptual ambiguity in defining LCT

A major finding of this review is the notable lack of conceptual clarity in how LCT are defined in the literature. Across the 12 studies, descriptors such as “veteran,” “experienced,” or “late-career” were used inconsistently, often without explicit theoretical grounding. While some studies relied on pragmatic thresholds, typically age or years of experience, only a minority referred to established career-stage frameworks (e.g., Baker, 2005; Huberman, 1989). This definitional variability presents several challenges. First, it hinders comparison across studies and undermines efforts to build a cumulative, generalisable body of knowledge (Borman & Kimball, 2005; Day & Gu, 2007). Second, it risks reducing a diverse population to a monolithic category, thereby obscuring variations in career trajectories, identity development and motivational orientations (Korthagen, 2017).

This is not merely a methodological issue. Definitions serve as gatekeepers to research inclusion and policy targeting. Arbitrary or overly narrow thresholds may exclude individuals whose experiences are relevant, but who do not conform to conventional criteria. Conversely, vague definitions dilute the specificity needed to design effective, stage-sensitive professional development. More robust, theoretically anchored approaches, such as those combining experiential and chronological markers (e.g., Brouhier et al., 2023), are needed to reflect the complex realities of teaching careers. Such models should also account for personal agency, institutional context and professional identity, aligning with contemporary understandings of teaching as a developmental and socially embedded profession (Day, 2017; Kelchtermans, 2009).

Yet this variability may also point to a more complex reality, namely, that the category of “late-career teacher” is not inherently fixed, but is itself a constructed and context-dependent designation. Rather than seeking a single definition, it may be more productive to approach late-career teaching as a heterogeneous professional condition, shaped by a dynamic interplay of factors including institutional histories, personal agency, career mobility and shifting educational priorities. In this view, definitional ambiguity is not just a limitation to overcome or a methodological hurdle, but also a conceptual opportunity to theorise the plurality of professional lives in the later stages of teaching as a fluid, contextually situated construct. This requires analytical models that can accommodate such diversity without flattening it.

This ambiguity also reflects deeper epistemological tensions in the literature between linear, age-based career models and more dynamic, non-linear understandings of professional trajectories (Raduan & Na, 2020; Sikes, 2000). Addressing this requires both clearer operational definitions and greater theoretical coherence. Doing so would improve the interpretability of findings, enable better cross-study synthesis and inform more tailored policy responses that acknowledge the diversity of late-career teaching experiences.

5.2 LCT and professional learning

The review confirms that professional learning remains a vital component of late-career engagement, even though it is often underexplored or mischaracterised in the literature. TPL is generally understood as a set of activities that enhance teacher professionalism and professionalism throughout the career span (Brücknerová & Novotný, 2017; Evers et al., 2016). Across the selected studies, professional learning was depicted not as a static requirement, but rather as an ongoing process embedded in teachers' everyday work and evolving professional identity. This perspective challenges the deficit-based narratives that often associate the later stages of teaching with stagnation or disengagement. Instead, professional learning is positioned as a key lever to sustain motivation, purpose and meaningful contribution within the school community, an interpretation that also echoes conclusions drawn from another systematic review on teacher communities (Vangrieken et al., 2017).

Interactional and collaborative learning activities emerged as particularly significant for LCT. These included participation in professional learning communities, mentoring activities, intergenerational exchanges and involvement in school- or university-based networks. Regardless of the specific modality or context, the reviewed literature repeatedly emphasized the role of socially situated learning as a driver of engagement. Several studies highlighted that professional learning opportunities grounded in interaction, dialogue and peer support were more likely to resonate with the needs and preferences of LCT (Brouhier et al., 2023; Suryani & Widiyastuti, 2015). These findings align with those of Hagedoorn et al. (2025), who found that experienced vocational education teachers remained active learners, particularly through informal learning embedded in their daily teaching practice. Their results offer a counterpoint challenging the assumptions found in earlier research (e.g., Kyndt et al., 2016) that suggest a decline in learning engagement with professional seniority. On the contrary, LCT appeared to continue investing in both formal and informal learning opportunities when these are perceived as relevant and professionally meaningful (Sancar et al., 2021).

The present review aligns with this view. The selected studies consistently reported that LCT remained professionally active, not only by engaging in diverse development activities, but also by contributing to professional dialogue and shared practice within their institutions. Their commitment to learning often found expression in collaborative initiatives, mentoring roles and reflective inquiry. Far from being disengaged, these teachers frequently expressed a desire to adapt to evolving demands, refine their instructional strategies and support colleagues and learners alike. Importantly, this continued involvement was closely linked with the relational and contextual nature of the learning environment. Professional learning that is embedded in trust-based collaboration and aligned with teachers' experience and

aspirations appears particularly effective in fostering both individual growth and collective capacity.

5.3 The JD-R model as analytical lens for late-career professional learning

In this review the JD-R model served as an analytical lens to map workplace factors influencing late-career teacher professional learning. Rather than offering a review of JD-R applications in educational research, this study used the framework to identify conceptual and empirical shortcomings in the literature, particularly in relation to these professionals. Notably, personal resources such as adaptability, resilience or self-efficacy, frequently studied in general teacher populations (Mu et al., 2024; Parsons et al., 2016), are under-investigated in studies focusing specifically on LCT (Collie et al., 2018; Dicke et al., 2018). Future research should explore how these internal assets and core strengths are maintained, developed or diminished over time, and how they interact with job demands and resources in this specific profession.

Moreover, the JD-R framework's binary categorisation of workplace factors has been subject to critique. As Granziera et al. (2021) noted, job demands are not inherently detrimental, nor are all resources universally empowering. For instance, student misbehaviour may, in some cases, stimulate pedagogical creativity, while ambiguous role expectations may erode teacher engagement. A more differentiated understanding of demands and resources is therefore essential, one that considers their intensity, contextual meaning and subjective interpretation

Qualitative inquiry holds particular promise to advance this nuanced perspective. Future studies should explore how LCT perceive and experience specific job demands and resources in situ. Such investigations would help uncover the subjective meaning attributed to certain job characteristics, for example, that the same factor may be interpreted as energising by one teacher and draining by another, offering crucial insights into the relational and situational nature of professional learning needs. These nuanced understandings would offer valuable insights for adapting professional learning strategies to the diverse experiences of LCT.

Furthermore, despite increasing attention to teacher professional learning across career stages, there remains a notable lack of interventions explicitly tailored to the needs of LCT. Insights from qualitative research could play a pivotal role in informing the design of more context-sensitive and responsive professional learning strategies for this under-addressed population. By better understanding how LCT interpret and navigate their work environments, school leaders and policymakers can develop support mechanisms that reflect actual rather than assumed needs. Although intervention strategies informed by the JD-R model have shown promising outcomes (Alonso et al., 2019), their application to late-career TPL requires caution. Programs perceived as top-down or imposed may exacerbate stress (van Wingerden et al., 2013). In contrast, job-crafting interventions, activities that support teachers in shaping their work environments proactively to better align with their professional values, goals, strengths and needs, offer a more empowering alternative. These approaches not only enhance engagement and well-being, but also contribute to a school culture that recognizes the shared responsibility for professional learning among individuals, institutions and policy systems. For further reviews of intervention-based approaches within the JD-R framework, see also Knight et al. (2019) and van Wingerden et al. (2017)

5.4 Limitations and future research

Despite the increasing relevance of the topic, the limited scope of the existing research was striking: only 12 peer-reviewed articles were identified over a 24-year period. This scarcity suggests that the professional learning of LCT remains a peripheral concern in the broader educational research agenda. Against this backdrop, the present review provides valuable insights into the professional learning of LCT, but also faces certain limitations that must be acknowledged. A first limitation concerns the scope and interpretation of the meta-summary model developed in this study. The model was primarily based on self-reported experiences and perceptions of LCT, which may not be unique to this cohort. The identified job demands and resources could also be relevant for teachers at other career stages, including novices and mid-career professionals. This underscores the need for comparative empirical research across different age and career groups to assess whether these patterns are specific to LCT or more broadly generalizable. For instance, van Der Heijden's (2006) study on career development activities used comparable age groupings across the whole career span, offering a useful model for such comparisons. Future studies could adopt a similar approach to empirically test the applicability of the JD–R framework across generational cohorts.

Second, the selection criteria for included studies introduced potential bias. This review only included peer-reviewed journal articles available in four academic databases accessible through our institutional library. As such, it excluded grey literature, dissertations, book chapters and non-English publications. The exclusion of studies in other languages or formats might have limited the diversity of perspectives represented. Similarly, the review focused solely on compulsory education (preschool, primary and secondary), and the conclusions are therefore not generalizable to post-compulsory or higher education contexts. Moreover, while the limited number of studies reviewed reflects a lack of research on late-career teacher development, it also narrows the evidence based on which conclusions can be drawn. This restriction is further explained by the fact that only studies specifically targeting LCT as a distinct group were included. As a result, a substantial number of comparative studies examining generational differences among teachers (Geeraerts et al., 2018; Karlberg & Bezzina, 2022; Portela Pruaño et al., 2022; Walsh, 2022) were excluded, despite offering potentially relevant insights. The use of broader inclusion criteria in future reviews may yield additional insights into how professional learning is experienced across contexts. The geographic distribution of studies also presented a limitation. Most of the articles analysed reported on studies conducted in Western countries, predominantly in Europe and North America. This leaves a significant gap in understanding how cultural, institutional or policy differences may influence TPL in non-Western settings, where the role and status of LCT may differ considerably (Rosenberg et al., 2024).

Moreover, a further limitation concerns the methodological scope of the existing literature. The predominance of qualitative research designs, used in nine out of the 12 studies, reflects a dominant interpretative orientation in this field, which favours in-depth, context-sensitive accounts of teachers' experiences. While this approach provides valuable insights into the subjective and relational dimensions of professional learning, it also limits the comparability and generalisability of the results. The variables and mechanisms identified in the analysis remain largely hypothetical and would benefit from further empirical validation. In particular, future research should use comparative, longitudinal or mixed models to test the sustainability, scalability and effectiveness of specific learning interventions over time and

in different contexts. In addition, there was also a clear imbalance in the distribution of studies between different levels of education. Most research focused on primary and secondary education, while early childhood education remained significantly under-represented. This is a significant gap, especially given the emotional, physical and pedagogical demands of early childhood education work environments (Kwon et al., 2020; Randall et al., 2023). As the early childhood education workforce is aging in parallel with other sectors, there is an urgent need for studies examining the professional learning conditions, job demands and support structures specific to this setting. Such research could yield critical insights into how to better support LCT working in one of the most demanding and least visible sectors of education.

Another consideration concerns the use of the QARI quality assessment tool. While it served as a valuable guide in evaluating methodological rigor, four items in the checklist, namely, ethical approval, researcher influence, philosophical congruity and the cultural/theoretical positioning of the researcher, proved problematic. These criteria were rarely addressed or were difficult to apply consistently across studies. As a result, they were excluded from the final assessment. Instead, the quality appraisal focused on six core items related to methodological clarity and coherence. Articles were retained if they met at least five of these six criteria. Although this strategy enhanced inter-reviewer agreement and minimized misinterpretation, it may have led to the omission of certain studies that could have contributed valuable conceptual insights despite their reporting limitations. Finally, assessing credibility, dependability and transferability in qualitative systematic reviews remains a complex challenge. As Hannes (2011) and Dixon-Woods et al. (2007) suggested, review teams should adopt a balanced approach that combines technical appraisal with conceptual judgement. Future reviews may benefit from adopting structured frameworks such as Cochrane's three-step model (filtering, technical appraisal and theoretical appraisal) and from selecting quality appraisal tools aligned with their epistemological orientation and research objectives (Long et al., 2020).

5.5 Implications

Mentoring emerges as the most frequently reported form of professional engagement for LCT. Often regarded as repositories of expertise, LCT are typically assigned roles supporting novice teachers' induction into the profession (Mosley et al., 2023). However, this role is ambivalently portrayed in the literature. While mentoring can foster motivation, intergenerational dialogue and professional satisfaction, it may also generate stress, frustration and a sense of burden, particularly when expectations are unmet, support structures are lacking or the role is perceived as one-sided (Bressman et al., 2018). As such, mentoring should be regarded as an ancillary mechanism primarily oriented towards the induction of novice teachers, rather than as a structured professional learning pathway designed to address the specific needs and aspirations of LCT. Moreover, several studies suggest that some LCT did not benefit from formal mentoring during the early stages of their careers, potentially limiting opportunities for structured peer connection and reflective professional growth (Iancu-Haddad & Oplatka, 2009; Hargreaves & Elhawary, 2019). While informal support may have existed, the absence of systematic mentoring frameworks may have contributed to a sense of professional isolation and missed occasions for guided development. These observations highlight the need to reconceptualize mentoring as a reciprocal and developmentally supportive activity, one that acknowledges not only the

learning needs of mentees, but also the professional aspirations and conditions necessary for mentors to thrive (Karlberg & Bezzina, 2022). Without such rebalancing, the potential for cultivating a positive and empowering professional climate may remain limited. Schools should therefore recognize teaching as a career-long learning process and implement professional development initiatives that are tailored to the evolving needs of LCT, programs that enable them to thrive, feel valued and contribute meaningfully to school improvement (Guglielmi et al., 2016). Alternative mentoring formats, such as mutual coaching or reverse mentoring (Zauchner-Studnicka, 2017), may promote cross-generational learning, shared leadership and more balanced professional relationships. Notably, limited research has examined how LCT pursue professional growth outside of mentoring roles, particularly through activities such as experimentation, improvisation or pedagogical reflection, highlighting a gap in understanding how these educators continue to develop in alternative ways.

A second recommendation is to encourage school systems to explore innovative strategies for enhancing late-career teacher learning, as described in the literature. School leaders have a critical role to play in promoting a professional environment in which teachers' expertise is made visible, accessible and shareable among colleagues. This includes fostering both formal and informal collaborations and cultivating trust-based, collegial relationships. Moreover, school leaders could introduce "retirement preparation programs" with a dual preventive focus: to help teachers reflect on, optimise and extend their professional resources in the later stages of their careers, while also supporting them in developing and maintaining their personal resources. In designing such initiatives, school leaders and educators might refer to Hunzicker's (2011) checklist, which outlines five core characteristics of effective professional development: It should be supportive, ongoing, collaborative, job-embedded and instructionally focused (see Appendix C). When these principles are applied, professional learning is more likely to be perceived by (late-career) teachers as meaningful and relevant, thereby supporting their continued learning and engagement in practice.

Chapter 3

Examining job demands and job resources of LCT

Early childhood education (ECE) is one of the most demanding educational sectors, exposing teachers to intense physical, emotional, and cognitive strains. These challenges are compounded by systemic reforms and demographic shifts that intensify pressures on educators, particularly those in late-career phases (LCT). This qualitative study explores how LCT in ECE settings perceive and manage the complex demands of their work. Using the Job Demands-Resources model as a conceptual framework, in-depth interviews were conducted with 24 teachers aged 50 and above, with at least 20 years of experience. Thematic analysis revealed a dynamic interplay between job demands and resources. While many LCT described moments of fulfilment and purpose, others highlighted feelings of exhaustion, frustration, and dissonance between educational ideals and institutional realities. The findings underscore that late-career teaching experiences are shaped by intersecting personal, relational, and systemic factors. This nuanced understanding of LCT experiences offers valuable insights for designing supportive policies, interventions, and school cultures that promote the long-term engagement and well-being of this crucial educational workforce segment.

Keywords: Late-career teachers, Job Demands-Resources, early childhood education, qualitative design

Reference

Brouhier, Q., Raemdonck, I., & März, V. (to be submitted). *Late-Career Teachers in early childhood education: A Qualitative Exploration of the Job Demands-Resources Model*.

Examining job demands and job resources of LCT

1. Introduction

Early childhood education (ECE) is widely recognized as one of the most demanding sectors in the educational landscape (Cumming, 2017). Teachers in ECE often contend with physically strenuous tasks, limited resources, and emotionally challenging environments (Randall et al., 2023). These demanding working conditions often lead to chronic fatigue, emotional exhaustion, and ultimately burnout (Inbar & Shiri, 2021; Schaak et al., 2020). Moreover, these challenges have been exacerbated in recent years by successive educational reforms and policy changes. Such reforms often introduce new curricular frameworks, increased accountability, and heightened expectations for teachers, adding further complexity to an already demanding profession (Creagh et al., 2023). This intensification of job demands compounds the physical and emotional strains already faced by ECE teachers, making it increasingly difficult for them to sustain their well-being and professional engagement (Kwon et al., 2022). The consequences extend beyond individual well-being, directly affecting classroom quality and children's development (Grant et al., 2019; Henry et al., 2023). Despite their crucial role in supporting children's growth and learning, ECE teachers, particularly those in the later stages of their careers, remain underrepresented in educational research and policy (Kwon et al., 2020).

This oversight is particularly concerning given the essential role that late-career teachers (LCT) play in maintaining pedagogical stability, continuity, and intergenerational expertise within schools (Admiraal et al., 2019). Their accumulated knowledge and experience make them valuable mentors and stewards of institutional memory, contributing to the transmission of teaching practices and values across generations (Geeraerts et al., 2018). The presence of LCT often provides a stabilising force within schools, fostering a sense of collective identity and helping to shape a supportive professional culture (Kelchtermans, 2005; Mullen, 2025). However, while they contribute significantly to these foundational aspects of school life, they simultaneously face the dual challenge of coping with demanding working conditions and navigating age-related changes in personal resources such as energy and resilience (Holman & Walker, 2021). Although some LCT remain motivated and deeply engaged, others experience declining well-being and early exit from the profession (García-Arroyo et al., 2019; Ozamiz-Etxebarria et al., 2023). Yet, much of the literature has not fully explored how these teachers interpret and manage the everyday demands of their work, especially considering the unique physical and emotional challenges they face (Eadie et al., 2021). Furthermore, their perspectives and lived experiences are seldom prioritised in studies on teacher well-being (Gore & Rickards, 2020). To address this gap, this qualitative study draws on the Job Demands-Resources (JD-R) model (Bakker et al., 2023) as a conceptual framework. The JD-R model is particularly well-suited for this context because it acknowledges that positive outcomes emerge from the dynamic interplay between job demands and available resources. This theoretical lens is valuable for capturing not only the burdens that teachers face but also the sources of resilience and professional fulfilment that sustain their motivation and engagement (Granziera et al., 2021; Brouhier et al., 2023).

Moreover, while the JD-R model has been widely used to examine stress and engagement in educational settings (Viotti et al., 2020), it has rarely been applied to the specific experiences of late-career ECE teachers, whose work is shaped by age-related challenges and evolving professional expectations (Klusmann et al., 2008). By adopting this model, the study aims to provide a balanced and nuanced understanding of how LCT navigate the complex conditions of their work, highlighting the strategies and resources that enable them to remain engaged and continue evolving in late career.

Furthermore, the unique configuration of ECE in Belgium, particularly in the French-speaking Community (FWB), provides a compelling and context-specific backdrop for this study. The Belgian early education system is delivered through a tripartite structure of state-run, municipal, and subsidised private institutions, serving children aged 2½ to 6 years (FWB, 2020). This institutional diversity fosters a degree of flexibility and choice for families, but it also introduces significant disparities in resources, governance practices, and working conditions across different schools. For teachers, especially those in late career, these differences can translate into varying levels of administrative support, pedagogical autonomy, and professional learning opportunities. Although all providers operate under the same broad regulatory framework, the day-to-day realities of teaching can differ substantially depending on the school's funding model and its position within this tripartite system. In the FWB, classes typically host an average of 22 to 24 children, with a statutory maximum of 24 pupils per group-class from the earliest level (*accueil*) through to the third year (*Circulaire 9291*, FWB, 2024). These figures place Belgium at the higher end of the European scale, where the average class size is 19 pupils (European Commission/EACEA/Eurydice, 2023). By comparison, countries such as Greece and Latvia report notably smaller groups, with fewer than 17 children per class, while in France, public ECE classes typically enrol 21 to 22 pupils. This relatively large class size underscores the intensity of daily interactions and the supervision demands placed on Belgian ECE teachers, particularly those in late-career stages.

Beyond class size, the professional environment is shaped by broader demographic and systemic factors, including an ageing workforce, evolving policies, and the decentralised governance characteristic of Belgium's three language communities (Pirard et al., 2024; Van Laere et al., 2014). While Belgium boasts strong foundational training and comprehensive regulation, the daily realities of teaching in these settings remain physically and emotionally challenging, especially for late-career educators. The structural split between childcare (for children under three) and ECE, coupled with regional policy frameworks, creates a fragmented system that can exacerbate institutional rigidities and limit flexibility in managing late-career experiences. Consequently, there is a notable lack of research that directly examines how these late-career ECE teachers experience and navigate the complexity of their work. This gap underscores the urgent need for nuanced, context-sensitive inquiry into how these educators manage multiple demands, access resources, and sustain their professional engagement in the final stages of their careers.

2. Theoretical framework

This section provides a comprehensive overview of how LCT are defined in the existing literature, along with an explanation of the Job Demands-Resources (JD-R) model, which captures the concepts of teachers' job demands and job resources.

2.1 Late-career teaching

The literature offers varied perspectives on what constitutes the final career stage for teachers, reflecting both the complexity of the teaching profession and the nuances of individual professional trajectories (Raduan & Na, 2020). Two main approaches typically underpin these models. First, chronological age is used as a defining criterion, with some frameworks linking the late-career phase to teachers nearing retirement age, such as Baker's (2005) model, which situates this phase at around 54 years old, and Van der Heijden's (2006) classification, which considers teachers aged 50 and above as "seniors." Second, years of experience form the basis for defining late-career status, with teachers labelled as "veterans" or "experts" after accumulating extensive service. These thresholds vary across studies, ranging from 15 years (Day & Gu, 2006) to 26 years (Berliner, 1994), underscoring the fluidity of this concept.

Several scholars have combined these two approaches to provide a more comprehensive definition of LCT. For instance, Brouhier et al. (2023) and Iancu-Haddad and Oplatka (2009) identify LCT as those who have both at least 20 years of experience and are aged 50 or above, acknowledging that both professional tenure and age-related factors shape this career stage. Beyond these formal definitions, the literature highlights that LCT often embody a wealth of tacit knowledge and pedagogical expertise, accumulated through years of classroom practice and professional reflection (Hargreaves & Fullan, 2012). Building on these insights, this study adopts a combined definitional approach, focusing on teachers aged 50 and with at least 20 years of experience.

2.2 The job demands-resources model

The Job Demands-Resources (JD-R) model, introduced by Demerouti et al. (2001), offers a comprehensive framework for understanding how various workplace factors shape employee experiences and outcomes. This model distinguishes between two broad categories: job demands and job resources. Job demands refer to the physical, cognitive, or emotional efforts required in the work context, these efforts, while inherent to the role, come at a physiological or psychological cost (Bakker et al., 2023). Such demands can be both quantitative (e.g., workload) and qualitative (e.g., emotional strain), encompassing tasks that may lead to exhaustion, stress, and, if sustained over time, burnout (Schaack et al., 2020a).

On the other hand, job resources include all the physical, psychological, social, and organizational aspects of the work environment that facilitate goal attainment, reduce the negative impact of demands, and promote personal growth (Bakker et al., 2023). These resources can be external (e.g., support from colleagues and supervisors, autonomy in decision-making) or internal, in the form of personal resources. Personal resources, such as self-efficacy, optimism, and resilience, are individual attributes that enable teachers to navigate challenges and maintain a sense of competence and agency (Taris et al., 2017; Grover et al., 2018). A key proposition of the JD-R model is that the interplay between demands and resources determines both health-related outcomes and work engagement. When resources sufficiently buffer the impact of demands, individuals are more likely to experience well-being, self-development, and a sense of purpose at work (Granziera et al., 2021; Brouhier et al., 2023). Conversely, an imbalance where demands outweigh available resources can erode energy levels and mental health, creating a breeding ground for fatigue and emotional exhaustion (Bakker & Demerouti, 2017).

2.2.1 Specific demands and resources in ECE settings

Within early childhood education (ECE) contexts, these dynamics are particularly salient. Teachers in ECE are exposed to a variety of physical demands, including working in child-sized environments that strain the body, repeated lifting, and continuous movement throughout the day (Randall et al., 2023). Emotional and cognitive demands are equally pronounced: teachers must manage diverse needs, respond to behavioural challenges, and navigate relational conflicts with colleagues and parents (Peditzi et al., 2021). These cumulative demands create a high-risk environment for stress and burnout (Gavin & McGrath-Champ, 2024).

In contrast, job resources in these settings often emerge from supportive relationships and organisational climates that value collaboration and mutual respect (Viotti et al., 2020). Professional autonomy enables teachers to tailor their approaches to individual classrooms, fostering a sense of ownership and creative engagement (Hur et al., 2016). Moreover, opportunities for professional development, whether formal or informal, are central in equipping teachers to meet evolving challenges and sustain their commitment to the profession (Burchinal, 2018). However, while the importance of personal resources is well established in the broader JD-R literature (Taris & Schaufeli, 2015), their specific nature and application in ECE remain under-explored. Some scholars conceptualise these resources as psychological assets (e.g., hope, optimism) that shape teachers' perceptions of their work (Grover et al., 2018), while others view them as adaptive mechanisms that enable teachers to regulate the impact of job demands and maintain engagement (Brouhier et al., 2023).

2.3 Research questions

This study aims to explore the job demands and job resources encountered in ECE settings. Its primary objective is to identify the key demands and resources as perceived by LCT within their professional environments. To achieve this, the study addresses the following research questions:

RQ1: How do LCT perceive the final phase of their career?

RQ2: What professional demands and resources do LCT identify in their work settings?

3. Methods

This study adopts an inductive and phenomenological approach, seeking to capture the essence of LCT lived experiences in ECE settings (Webb & Welsh, 2019). Guided by this perspective, the focus was on describing the phenomenon in its complexity and understanding how participants make sense of their daily working conditions. In line with qualitative best practices, purposeful sampling was employed to identify information-rich cases (Creswell & Poth, 2016). More specifically, a homogeneous sampling strategy was used to ensure that participants shared key characteristics (e.g., age, experience) and a deep familiarity with the phenomenon under investigation (Etikan et al., 2016; Creswell & Plano Clark, 2023).

Data collection was conducted through in-depth semi-structured interviews, following a two-stage protocol adapted from Seidman (2012). This approach allowed for a progressive,

reflective exploration of participants' experiences. Each LCT took part in two individual interviews conducted between September and December 2023. The first interview focused on professional trajectories, including critical incidents and turning points, with particular attention to the development of professional learning. The second interview, scheduled one week later to maintain continuity and build upon emerging themes, aimed to deepen insights and clarify meanings (Woodside & Wilson, 2003). Interview duration ranged from 50 to 75 minutes. While most first interviews (80%) were conducted face-to-face, second interviews offered more flexibility, including in-person, phone, or video conferencing (Zoom/Teams), depending on participant availability.

Participant recruitment followed a multi-step process. Initially, a call for participation was disseminated through teacher-focused social media groups and professional networks. This yielded several eligible participants, who were then invited to complete a pre-screening questionnaire. Building on this, a snowball sampling strategy (Marshall & Rossman, 2014) was implemented: participants who had completed the first interview were encouraged to recommend colleagues who might also meet the inclusion criteria. This combination of outreach strategies ensured a diverse yet cohesive sample of late-career educators willing to share their nuanced perspectives.

This study employed purposive sampling to recruit a focused group of LCT. Participants were required to meet three inclusion criteria: (1) being at least 50 years old, (2) having a minimum of 19 years of teaching experience, and (3) currently working in early childhood education settings. To protect anonymity, all participants were assigned pseudonyms (Creswell, 2013). The final sample comprised 24 educators, 23 of whom were women and one man, reflecting the demographic composition of the ECE workforce in the French Community of Belgium (Fédération Wallonie-Bruxelles, 2024). These teachers were employed across the three main educational networks: the official subsidised network of Wallonia-Brussels Education (WBE), the Provincial official subsidised network, and the Confessional education network. School sizes varied from approximately 50 to 300 students, with participants working an average of 81% of a full-time equivalent schedule ($SD = 0.19$). Participants' ages ranged from 50 to 64 years ($M = 56.83$, $SD = 3.85$), and their teaching experience spanned 27 to 39 years ($M = 32.00$, $SD = 4.56$). All participants were actively teaching in settings that included children aged 2.5 to 6 years, thus encompassing the full ECE age range within the Belgian system. These diverse teaching contexts offered rich insights into the evolving demands and resources experienced by LCT in ECE and formed a robust foundation for the qualitative exploration of their professional realities.

Data analysis followed thematic content analysis (L'Ecuyer, 2011). Each transcript was carefully reviewed to identify key testimonies and thematic patterns (Lejeune, 2019). This process led to the emergence of significant themes, subthemes, and nuanced codes that collectively provided a deep, layered understanding of the participants' perspectives. Verbatim transcriptions ensured data integrity and captured the authentic voices of participants (Creswell & Poth, 2016). The final analysis foregrounded the interplay between job demands, job resources, and career perceptions, offering a comprehensive perspective on how LCT navigate their final career phase in early childhood education.

Table 5. Participant demographics and professional characteristics

Pseudonyms	Year	Teaching Exp	% Contract	Class	School type, urban/rural	School size
Lucia	1974	27	100%	K3	K-12 school, capital	Small, 5 classes
Greta	1973	28	100%	K1	K-12 school, capital	Large, 20 classes
Simona	1964	38	50 %	All	K-12 school, urban	Large, 19 classes
Alberta	1964	32	75 %	K2	K-12 school, urban	Large, 19 classes
Camilla	1972	31	100%	K1	K-12 school, urban	Small, 5 classes
Sara	1966	38	75%	K1	Kindergarten, rural	Small, 3 classes
Paola	1964	35	75%	All	Kindergarten, capital	Large, 13 classes
Hannah	1963	39	80%	K1	K-12 school, capital	Large, 14 classes
Lina	1973	30	80%	K1-3	Kindergarten, rural	Small, one class
Nora	1971	27	100%	K2	Kindergarten, capital	Large, 13 classes
Philipp	1969	30	50%	K2	Kindergarten, capital	Large, 14 classes
Nadia	1974	29	100%	K3	Kindergarten, capital	Large, 13 classes
Assunta	1963	37	50%	K2	K-12 school, urban	Large, 19 classes
Marine	1965	37	100%	K3	Kindergarten, rural	Small, 4 classes
Dominique	1970	32	75%	K1	Kindergarten, urban	Medium, 8 classes
Adeline	1970	28	50%	K2-K3	Kindergarten, rural	Small, 3 classes
Fabienne	1965	34	80%	K2-K3	K-12 school, urban	Medium, 7 classes
Laurie	1964	30	50%	K2-K3	Kindergarten, urban	Large, 12 classes
Georgia	1970	36	80%	K3	K-12 school, urban	Medium, 9 classes
Alina	1970	33	100%	K3	Kindergarten, rural	Small, 3 classes
Joana	1968	35	75%	K1	Kindergarten, urban	Medium, 9 classes
Astrid	1963	40	100%	K3	Kindergarten, rural	Small, 3 classes
Noémie	1972	22	100%	K1	Kindergarten, urban	Large, 13 classes
Miriam	1969	34	100%	K3	Kindergarten, urban	Large, 13 classes

Note: K-12 schools, also known as *écoles fondamentales*, cater for children aged 2.5 to 12. Kindergarten schools are for children aged 2.5 to 6 only.

4. Results

The following results section is organised to provide a comprehensive view of how late-career early childhood teachers experience their work environment, drawing on three interconnected areas. First, it explores the job demands these LCT encounter in their daily practice, highlighting the multifaceted nature of their work and the various sources of strain, whether physical, emotional, or systemic. Second, it examines the job resources that LCT mobilise to meet these challenges, including both the inherent satisfactions of working with young children and the collaborative supports within their institutions. These resources help sustain motivation and well-being, even in the face of intensifying demands. Finally, the section delves into teachers' perceptions of their end-of-career phase, offering insights into how they interpret and navigate this transition. This last part synthesises how teachers weigh personal fulfilment, physical and emotional fatigue, and their broader social role, painting a nuanced picture of the late-career experience.

4.1 Job demands: Converging and interacting pressures

The findings from the thematic analysis reveal a complex and layered set of demands that LCT navigate in their daily work. These demands emerge not only from the inherent nature of the profession but also from broader systemic shifts in the educational landscape. Physically, teachers reported significant strain due to repetitive movements such as bending down, lifting children for care routines, and constantly transitioning between seated and standing positions. These physically demanding tasks contribute to chronic pain, particularly in the back and joints, and to a general sense of exhaustion by the end of the day. Alongside these physical demands, participants described the relentless cognitive and emotional load of ensuring children's physical and emotional safety throughout the day. Managing classes of young children, particularly when dealing with more disruptive or socially withdrawn pupils, requires constant vigilance. Seven teachers reported that they had observed a shift in children's behaviour, with students appearing more individualistic and less curious, which heightened the challenge of creating a cohesive and engaging learning environment.

"No, it tires me, it tires me enormously. Having to squat down, to tie laces that are always coming undone, to change a child, to put their shoes back on, etc., well, my back takes the toll, and now getting back up is becoming harder and harder." (Fabienne, 59, L777-779)

"It's really a day on the run, if you think about it. I get in very early to avoid traffic or just to be on time and set everything up. Then it's go-time when they (students) arrive, and we're on until lunch... except I've reached an age where I can't necessarily hold it until then. My colleagues always laugh about it, but I've done the mama duck thing, I take my 24 ducklings with me to the bathroom. And then, well, it's either supervising recess or discussing a project over lunch. I scarf down my sandwich and, boom, back to preparing materials for the afternoon. The bell rings, and we're off again! Next thing you know, it's 4 p.m., and I still haven't had a moment to catch my breath... unless, of course, there are meetings after that." (Laurie, 60, L322-328)

Beyond these immediate challenges, teachers also spoke of the intensification of job demands driven by educational reforms and systemic changes. The introduction of new curricular frameworks, increased accountability measures, and the expectation to differentiate instruction for increasingly diverse classes were frequently cited as adding layers of complexity to their work. These reforms often demanded significant administrative work, such as record-keeping and participation in numerous staff meetings, which teachers felt detracted from their core mission of teaching and fostering children's development. As one participant described, these expectations left little room for creativity or spontaneity in the classroom, eroding the sense of meaning they derived from their work.

Institutional dynamics further compounded these challenges, although our data indicate that these dynamics varied significantly across the three main educational networks in the French Community of Belgium. In particular, the consequences of policy changes and budgetary pressures appeared to weigh more heavily on teachers in the Confessional network, where schools, although subsidised by the FWB, often operate with constrained budgets. These financial limitations do not always result in tangible improvements in working conditions, such as classroom soundproofing, optimising pupil circulation, or renovating ageing facilities. Consequently, some confessional schools suffer from outdated or deteriorating infrastructure, which can negatively affect both the quality of educational provision and the working environment for staff. By contrast, while challenges persist in the communal and WBE networks, the additional funding available from municipal authorities often enables targeted renovations and improvements to the physical environment of schools. These investments contribute to a more supportive and well-resourced context for teachers, helping to mitigate some of the daily strains of the profession.

“We work in the noise, in the cold during winter, and sometimes it's really disheartening to see that nothing moves forward, nothing really changes. We're always told there's no budget for that, and it wears you down... But I have colleagues in communal schools, and they tell me the municipality invested in refurbishing classrooms, making them more isolated... I think that really changes how you experience your job.” (Marine, 61, L201-206)

“Here, in the Confessional network, we often have to make do with what we have. There's no budget for renovating the old classes or for making sure we have proper spaces for the kids. I know some colleagues who work in municipal schools where the city invested in the schools. It's not that they don't have their challenges too, but at least they have some support to improve the basics” (Fabienne, 59, L346-351)

These disparities in financial support were compounded by institutional instability, particularly in the Confessional network. Several LCT in these schools highlighted how frequent changes in leadership eroded trust and continuity, leaving them feeling isolated and unsupported. Recurrent shifts in school management contributed to a sense of alienation and frustration, as teachers perceived that institutional decisions frequently overlooked their classroom realities and well-being needs. In contrast, teachers in the Provincial and WBE networks generally reported more stable experiences of school governance and leadership. In the Provincial system, where municipal authorities have a direct role in school management, some LCT noted that local leaders were often more sensitive to staff well-being

and occasionally made explicit efforts to acknowledge or honour the contributions of long-serving teachers. These practices fostered a greater sense of alignment between teachers and their schools' missions, reinforcing teachers' feelings of being valued for their experience and institutional memory. Similarly, LCT in WBE and provincial networks described a more predictable and supportive leadership environment, with fewer disruptive managerial changes. This relative stability served as a crucial buffer against the daily challenges of ECE teaching, supporting teachers' sense of professional purpose and enhancing relational cohesion within their teams.

"There are directions that come and go in this school. Some were really difficult, impossible to talk to or build a relationship. Others command like tyrants, who should take a step back and look at themselves and see the damage they can do to the whole team. They leave behind a battlefield. And who suffers in the end?" (Alina, 54, L449-453)

The post-COVID context added a further layer of complexity. LCT perceived behavioural changes in children, reduced social skills, increased reliance on screens, and heightened demands for attention, that further complicated their already demanding roles. These shifts, combined with the challenges of readjusting to in-person teaching after periods of remote learning, intensified the psychological and emotional demands placed on teachers. Participants described how the pandemic had not only disrupted educational routines but also left a lasting mark on their professional practices and personal well-being.

"We don't have any help, at least not for these specific children, we have to manage on our own... I have to train myself, read, contact people for information, try to find solutions... I'm not against taking on these challenges, but there have to be resources provided because right now, it all falls on us... An autistic child who screams, bites, or throws themselves around, it's incredibly hard to handle alone, even with my experience." (Miriam, 55, L482-486)

"Yes... and then the children, yes, much more individualistic, less curious, so it's much more difficult to form a group and have them learn together. For me, as someone who's really at the core of this, well, it's... it's... hard to create a class where everyone listens to each other... It's very complicated." (Adeline, 54, L272-274)

Finally, the cumulative effect of these multiple and intersecting demands was keenly felt by teachers, shaping their long-term engagement with the profession. Many participants spoke of the repetitive nature of their work as a double-edged sword: while routine can create stability, it also risked stagnation and a sense of being "stuck" in patterns that no longer felt fulfilling. As one participant reflected, the daily struggle to meet demands with inadequate resources and institutional support fostered feelings of survival rather than growth. Others described the psychological toll of feeling that their role was undervalued within broader social and educational systems, compounding their fatigue and sense of professional isolation.

4.2 Job resources: Finding balance and renewed motivation

The findings from the analysis reveal a rich and multifaceted set of job resources that support the professional well-being and engagement of LCT. One of the most significant resources identified was the inherent satisfaction teachers derive from their work itself. Many participants described the classroom as a place where they could temporarily set aside personal worries, finding solace and focus in their interactions with children. This ability to be present and immersed in the moment, “facing the children, you forget your worries”, was consistently cited as a powerful resource that helped teachers maintain their emotional equilibrium. Additionally, teachers expressed a deep sense of purpose and commitment to their educational role, viewing their work as a meaningful societal contribution that transcends mere job duties. This sense of alignment with broader social and moral imperatives was a key motivational driver that nurtured their professional identity and sustained their engagement, even in challenging circumstances.

“Yes, absolutely positive. We may sometimes have little problems in life. Well, we arrive in class and forget everything with the children. Showtime, we let go. We give a little bit, and they nourish us so much in return.” (Lina, 52, L120-122)

“We stay young, we keep up, actually. Well, yes, with all the new things, cartoons here and there. Because right now, I’m in a bit of a transition at home, a mum but not yet a grandmother. So, we stay, in a way, yes, we stay young, we stay young at heart thanks to these little ones or their older siblings. And yes, I think that’s rather good.” (Simone, 62, L78-82)

Another key dimension of job resources revolved around the relational climate within the school. Participants highlighted the importance of collegial support, both formal and informal, as a crucial source of resilience. Mutual respect and open communication among peers fostered a sense of solidarity and collective responsibility, providing a buffer against the daily demands of the job. Teachers also valued the support of school leadership, particularly when this was marked by reciprocal trust and a shared understanding of the challenges of ECE teaching. Where leadership created a calm, inclusive climate, marked by thoughtful language and genuine efforts to accommodate diversity, teachers reported feeling seen, respected, and motivated. This supportive interpersonal environment was not only protective but also generative, enabling teachers to experiment, share ideas, and adapt to evolving challenges collaboratively.

“I told you, my principal is quite nice, and she trusts us completely. She tells us what we’re supposed to do, she gives us a schedule and says, ‘Don’t forget, girls, for this date, you need to be on point for this, this, and that.’ She motivates us and makes sure everyone feels good.” (Miriam, 55, L61-65)

The dynamic and evolving nature of early childhood education itself also emerged as a source of renewal and stimulation. LCT spoke of the continuous cycle of change inherent in their work: each group of children presented new opportunities and fresh challenges, which they saw as a source of professional and personal growth. Rather than perceiving these changes as disruptions, many participants described them as invigorating, helping to break the monotony of routine and sparking curiosity and creativity. This attitude of ongoing adaptation, framed as “never boring” and “always something new”, was central to their

sustained motivation. Some teachers explicitly linked this mindset to a broader philosophy of lifelong learning, embracing the unpredictability of their work as an opportunity for experimentation and renewal.

“What could I say? First, the contact with the children, the wonder they can have. When the penny drops, they’re so proud to have understood. This contact with them is magical, I really love it.” (Andrea, 61, L100-105)

“That’s right, and also when we get feedback from parents at parent-teacher meetings. Parents who give compliments, who talk about their child imitating me at home, the kids playing teachers at home. I find it cute. And when parents give compliments, it’s really pleasant.” (Valérie, 54, L791-794)

Additional contextual resources included institutional practices and policies that facilitated a sense of belonging and alignment with teachers’ values. Participants appreciated working in environments that prioritised the needs and rights of children, valued cultural diversity, and actively cultivated inclusive practices. Furthermore, opportunities to engage in reflective practice, such as participating in workshops with external trainers or becoming master trainers themselves, were seen as important avenues for professional development and personal growth. These experiences encouraged teachers to critically reflect on their practice and adapt it to changing needs, deepening their sense of agency and expertise.

Finally, the unique and evolving profiles of the children themselves were often cited as a source of inspiration and professional fulfilment. Teachers observed that while children today can be more demanding, they also bring a freshness and curiosity that fuels educators’ enthusiasm. The children’s wonder at learning new things, “when the penny drops, they are so proud of what they’ve understood”, was described as a precious reward that reaffirmed the teachers’ sense of competence and relevance. These interactions offered a daily reminder of the meaning and value of their work, counterbalancing the heavier aspects of the profession.

“In our school, we’re constantly encouraged to think beyond the classroom, about how we can welcome every child, no matter their background or their story. We’ve had workshops with external trainers that really helped us rethink how we engage with diversity, and it has... it has pushed me to grow, to see my role as part of a bigger picture, not just someone who delivers lessons. And then there are those moments with the kids, when they finally understand something, their eyes light up, and you see that spark. It’s like a daily reminder that what we do matters, even when everything else feels overwhelming.” (Philipp, 56, L345-351)

4.3 Navigating the final phase: diverse perspectives on career endings

The findings reveal a nuanced landscape of perceptions among late-career early childhood educators regarding the conclusion of their professional journey. On the positive side, many participants viewed their final years in the profession as an opportunity for sustained engagement and active contribution. They highlighted a sense of fulfilment, describing themselves as feeling vibrant and well-positioned in their roles, with little sense of fatigue. Some even spoke of being at the “apogee” of their careers, experiencing a sense of professional mastery and seeing no immediate end in sight. This perspective was often linked

to the ability to initiate new projects or reframe their work as a fresh beginning rather than a final stage. The absence of administrative pressures, combined with a well-established sense of purpose, contributed to a positive outlook. The LCT did not feel that age diminished their professional identity or capacity; rather, they embraced their role as both a calling and a stabilising force in their lives, seeing themselves as educators who were still growing, learning, and contributing.

"I will continue to teach with the same desire and the same energy that I have always had. I will continue to give, to give all the love I have to these little ones." (Miriam, 54, L548-550).

"At this stage of my career, I don't feel like I'm slowing down. Actually, I feel I'm right where I need to be. I've got experience, I know what works, and I'm still curious to learn more. Honestly, I feel like I'm at the top of my game, and there's no reason for that to change anytime soon." (Laurie, 50, L310-318)

Conversely, others expressed more negative or ambivalent perceptions of this career phase. Fatigue and physical weariness were recurring themes, accompanied by a deep-seated sense of frustration or "fed-upness." Some educators highlighted the financial impossibility of stopping work, despite feeling ready to do so, due to economic pressures or the need to maintain pension entitlements. Additionally, personal circumstances, such as partners already in retirement, could create tensions within the domestic sphere and exacerbate feelings of imbalance. Participants also described the emotional burden of navigating a profession that increasingly conflicted with their personal vision of teaching and learning. For some, this clash between their ideal of the job and the daily reality of institutional pressures or rigid routines sparked significant doubt about continuing. The pandemic period, particularly COVID-19, further complicated these perceptions, creating distance and alienation between teachers and their work. These conflicting experiences underscore how the end of a teaching career is rarely a straightforward transition; rather, it is shaped by a complex interplay of personal, relational, and systemic factors.

"Honestly, I feel like I've been worn down, and it's not just the physical part, though that's real enough. It's the constant push, the never-ending changes and the feeling that I'm just treading water. I'd stop if I could afford to, but the truth is, I can't. My husband's already retired, and we rely on what I bring in. So I keep going, even though part of me feels like I'm not even teaching the way I believe in anymore." (Sara, 53, L206-210)

Beyond these broad themes, participants described several more nuanced dimensions of their late-career experience. Many appreciated the comfortable rhythms and acquired skills that allowed them to improvise and adapt to evolving content and classroom needs. They spoke of the flexibility afforded by the profession and the rich interactions with children that provided daily sources of joy and inspiration. Collegial relationships also emerged as a critical resource, with many valuing the camaraderie and familial atmosphere of their teams. This sense of mutual support was frequently described as a cornerstone of their ongoing motivation. Moreover, participants highlighted the richness of the children themselves, characterised by curiosity, diversity, and unique challenges, as a dynamic aspect that kept them engaged and invigorated in their work. This multi-layered appreciation for their practice suggests that, despite broader structural constraints, there remain pockets of deep personal and professional satisfaction that sustain educators' passion in the final phase of their careers.

"Slowly, I see that I am nearing the end of my career, not because I no longer love my job, but because it is becoming difficult, heavy, and stressful... it's hard to manage at times because, well, age is there and the years have passed. It's as if I'm waiting for my time, my sword of Damocles will come, but I don't know when."
(Alina, 54, L81-86)

"And at the start of the year, I was actually looking for another career path because, well... it's difficult, physically difficult, and here I am, still here, but I don't know for how long." (Assunta, 52, L234-235)

However, participants also voiced specific dilemmas and unresolved tensions surrounding retirement. Some teachers described a stark conflict between their professional dedication and their declining physical health, often framing it as a moral dilemma: "to keep working or to preserve one's health." Many postponed retirement through formal or informal means, such as manipulating medical certificates or negotiating phased departures, reflecting both practical constraints and a reluctance to fully disengage from a deeply meaningful role. Others noted that, while they could envisage no alternative to their teaching identity, they feared the potential psychological impact of a final departure, described by one as "it would kill me." Such intense attachment to teaching underscores the depth of professional identity formed over decades of practice. Yet, it also signals a potential vulnerability when structural supports or career transitions are lacking, leaving teachers caught between commitment and the physical toll of the work.

"There's something special about this time in my career. Sure, it's demanding, but I feel like I've found a rhythm that works for me. The children bring me so much joy every day, it's never the same with them, always something new. And the team, we're like family now. Even if the system doesn't always make it easy, these connections and the small moments of wonder make it all worth it." (Lucia, 50, L76-81)

"I can't even imagine stopping. It's not just a job, it's who I am. If I had to leave, I think it would destroy a part of me, I wouldn't know what to do with myself anymore."
(Dominique, 55, L150-152)

Finally, reflections on the remaining years in the profession reveal a blend of hope and resignation. Some late-career teachers expressed a critical view of the future, seeing few viable pathways other than eventual medical retirement, particularly in the face of accumulated physical and emotional exhaustion. Others, however, retained optimism,

viewing newer school rhythms as offering potential benefits for both themselves and their pupils. This ambivalence was also marked by feelings of disillusionment with the educational system, particularly in light of shifting institutional expectations and what they perceived as the erosion of supportive structures over time. Yet, even amid burnout and episodes of forced withdrawal, some reported extended sick leave as a turning point, participants often described active efforts to reclaim personal well-being through self-reflection, hobbies, or physical activity. This ongoing negotiation between professional identity, personal well-being, and institutional pressures encapsulates the complex, dynamic nature of the end-of-career experience in ECE teaching.

"There are days when I feel I have nothing left to give, and the only way out seems to be a medical exit. But other days, I think maybe I still have some good years left in me. I've started running again, doing yoga... it helps me remember that I'm more than just this job. Still, it's hard to see a clear future when everything around us keeps changing and there's no real support." (Marine, 61, L510-514)

5. Discussion

This study set out to explore how LCT perceive and navigate the multiple demands and resources that shape their professional experiences. Grounded in the Job Demands-Resources (JD-R) framework, our findings confirm and extend existing literature by highlighting how these converging pressures and supports play out in the final phase of teachers' careers.

Our results echo previous research emphasising the centrality of social relationships as protective resources in teaching contexts. Like Stang-Rabrig et al. (2022) and Hascher and Waber (2021), we found that supportive relationships, with colleagues, leadership, and families, were key in buffering daily stressors. Teachers described a rich relational climate in which mutual respect, shared responsibility, and open communication formed the backbone of their resilience. These findings align with evidence from Hilger et al. (2021) and Shpancer et al. (2008), who identified the relational and emotional connections in ECE as pivotal to job satisfaction and sustained motivation.

In contrast, our data also reinforced known challenges in ECE work, particularly the physically and emotionally demanding aspects that intensify with career length. Frequent references to bodily strain, relentless cognitive load, and escalating institutional expectations resonate with prior studies (e.g., Jeon et al., 2022; Cau-Bareille, 2014). Notably, the 'day on the run' metaphor captures how structural features of the job, lack of breaks, repetitive movements, and institutional fragmentation, compound the risk of chronic fatigue and burnout (Qi et al., 2015). These demands highlight the need for more targeted strategies to mitigate cumulative strain, particularly in late-career stages.

Yet our findings also highlight the particular complexities of the Belgian ECE system, including the decentralised governance and the unique professional environment in the French Community (FWB). While Belgian early childhood benefit from comprehensive and well-regulated training pathways, which equip them with a solid foundation of pedagogical, psychological, and practical knowledge (Pirard et al., 2015), the fragmentation of responsibilities and shifting curricular expectations add further layers of tension. Many LCT described feeling that they had to shoulder a disproportionate burden, navigating these demands with limited institutional support. In particular, disparities in resources and

leadership stability across the three networks intensified these challenges. Teachers in the Confessional network, for example, reported feeling especially exposed due to tighter budgets and more frequent changes in leadership. These differences contributed to a perception of unequal treatment compared to colleagues in the communal and WBE networks, where local authorities or more stable governance structures provided greater support. Frequent leadership turnover and contradictory or shifting directives from management further reinforced a sense of being left to manage alone, a perception some participants described as a subtle yet powerful form of “institutional violence” (Admiraal & Røberg, 2023; Zavidovique et al., 2018). Even when not explicitly framed as “violence,” many LCT expressed feelings of abandonment, explaining how these cumulative pressures left them feeling solely responsible for sustaining both the learning environment and their own well-being in the face of escalating demands. This perception resonates with previous research documenting how a lack of institutional support and the intensification of job demands can erode teachers’ sense of professional agency and increase emotional exhaustion (Kelchtermans, 2017; Skaalvik & Skaalvik, 2017)

Importantly, our findings reveal how these systemic demands intersect with personal and relational dynamics to shape perceptions of career sustainability. While some LCT described feeling at the “apogee” of their careers, experiencing a sense of mastery, purpose, and even renewal, others voiced deep fatigue and a profound dissonance between their educational ideals and the everyday realities of their work. These divergent perceptions suggest that the final phase of an ECE career is rarely linear: it is marked by an ongoing negotiation between personal values, physical resilience, and institutional expectations. For example, some participants described feeling energised by their evolving roles, relishing the challenge of mentoring younger colleagues or initiating new projects. Others, however, felt that their physical decline and the intensification of work demands left them trapped in a cycle of survival rather than professional growth. These nuanced experiences align with recent work on the cumulative impact of job demands in late-career phases (Admiraal & Røberg, 2023).

Crucially, our data also highlight that the final years of teaching are not solely defined by decline or withdrawal. Many LCT spoke of the daily joys of working with children, of the invigorating challenge of adapting to new rhythms, and of the pleasure of witnessing children’s curiosity spark. These “pockets of satisfaction”, as one participant described them, underscore that late-career teachers remain not only capable but also deeply engaged, provided their work environments foster autonomy, mutual respect, and supportive peer relationships. This finding resonates with Hilger et al. (2021) and Beltman et al. (2019), who stress the centrality of relational and intrinsic resources in sustaining teachers’ engagement.

6. Limitations and future research

As with any qualitative inquiry, this study must be interpreted with an awareness of its inherent limitations and boundaries. While the findings provide rich and nuanced insights into the lived experiences of late-career early childhood educators, several methodological and contextual considerations temper the scope and transferability of these insights. The following paragraphs outline these key limitations, encompassing potential biases in participant responses, the partial perspectives captured, gender imbalances in the sample, and the temporal specificity of data collection. Together, these reflections aim to provide a

transparent and balanced appraisal of the study's contributions and the caution warranted in extending its conclusions to broader contexts.

A significant limitation of this research is the potential for social desirability bias in the participants' accounts. Given that the interviews delved into sensitive aspects of late-career teaching, such as physical fatigue, emotional strain, and potential burnout, participants may have felt compelled to present their experiences in a more favourable light (Fisher, 1993). This tendency can arise from a desire to appear resilient or dedicated, particularly within a profession where commitment and self-sacrifice are highly valued cultural norms (van de Mortel, 2008). Consequently, there is a risk that some of the challenges or feelings of frustration expressed by participants were underreported or nuanced in ways that aligned with perceived expectations. This bias could lead to an overemphasis on positive aspects, such as fulfilment in working with children or supportive peer relationships, while obscuring deeper feelings of discouragement or alienation (Krumpal, 2013). Although efforts were made during interviews to create a safe and non-judgemental environment, including the use of open-ended questions and follow-ups that encouraged critical reflection (Patton, 2015), the inherent power dynamics of the researcher-participant relationship and the professional identity of the interviewees may have limited their willingness to fully disclose certain difficulties (Berger, 2015). Future research might address this by incorporating complementary data sources, such as anonymised surveys, or by facilitating collective discussions where the collective dimension may foster more candid sharing of less socially acceptable sentiments (Richman et al., 1999).

Another limitation of this study lies in the partial perspective it provides by focusing solely on the voices of LCT. While this approach yields rich and nuanced insights into their experiences (Clandinin & Connelly, 2000), it does not account for the broader relational and organisational contexts in which these experiences are situated (Hammersley & Atkinson, 2007). For instance, the perspectives of school leadership, colleagues at earlier career stages, or even families of the children in their care could offer valuable counterpoints or complementary understandings (Schoen & Fusarelli, 2008). This absence means that the findings, while authentic and richly detailed, may be shaped by the particular concerns and professional identities of LCT (Kelchtermans, 2009). Their accounts, rooted in their lived experience and reflective of their personal and professional investments, might therefore highlight specific aspects, such as personal fulfilment, the strain of repetitive tasks, or evolving classroom dynamics, while underplaying others, such as the wider organisational culture or systemic barriers that could be more visible to school leaders (Lichtman, 2013). Addressing this limitation in future research could involve integrating multiple stakeholders' viewpoints through triangulation (Flick, 2018). Such a multi-perspective approach would help to map out the intersections between individual perceptions and broader systemic forces, thereby offering a more comprehensive understanding of late-career experiences in early childhood education.

A further limitation of this research is the exclusively female composition of the sample. While this mirrors the gendered reality of the teaching workforce in French-speaking Belgium (FWB, 2023) and more broadly in Europe, it nonetheless constrains the range of perspectives captured (Drudy, 2013; Rohrmann, 2019). This gender imbalance, which is well documented in early childhood education, could provide important insights into how the sector's appeal and working conditions shape career paths and professional identities.

Previous research has shown that female teachers often face heightened challenges in balancing professional responsibilities with family obligations, a factor that can significantly shape their late-career experiences (Gu et al., 2020). Indeed, Cau-Bareille (2016) highlights how women frequently bear a disproportionate share of domestic responsibilities, intensifying the work–life conflict and its emotional toll. Following the suggestions of Tuxford and Bradley (2014), future research would benefit from examining the cumulative pressures associated with juggling multiple roles, such as teacher, parent, and spouse, to better understand how these intersect to influence experiences of stress and emotional burnout. Such research could yield valuable insights into how gendered expectations and responsibilities shape not only individual well-being but also broader patterns of professional engagement and attrition in late-career early childhood education.

Finally, the temporality of the investigation presents another constraint, although in qualitative research, the objective is not generalisability but rather a rich, contextualised understanding (Creswell & Poth, 2016; Maxwell, 2013). Data collection took place between September and December 2023, during which participants' narratives were necessarily shaped by the specific policy environment and contextual factors of that period. Given the dynamic nature of early childhood education, where policy reforms, staffing arrangements, and public discourses evolve continually (Creagh et al., 2023), these findings should be understood as a snapshot that reflects a particular moment in time rather than a longitudinal perspective. While this cross-sectional approach offers valuable insights into the lived experiences of LCT during this period, it does not capture how these perceptions and strategies might change over time, especially in response to broader systemic transformations, such as those accelerated by the COVID-19 pandemic (Kwon et al., 2022; Schaack et al., 2020b). This temporal limitation suggests the need for future research that adopts a longitudinal lens, following teachers over an extended period to explore how their professional trajectories, well-being, and responses to shifting demands evolve. Such longitudinal work would contribute to a deeper understanding of how late-career teachers' perceptions and engagement are shaped by changing institutional landscapes and cumulative experiences (Admiraal et al., 2019; Van Droogenbroeck & Spruyt, 2015).

7. Practical implications

The conclusions of this study invite reflection on the implications for practice, particularly regarding the structuring of late-career experiences in teaching. In the current context of teacher shortages, efforts have largely focused on retaining teachers of all ages by dissecting the root causes of attrition in the profession (Dupriez & Mahiat, 2023) and promoting studies on the well-being of future teachers (Dekeyser et al., 2025), the social and professional integration of novice teachers (März & Kelchtermans, 2020), and the experiences of second-career teachers (Coppe, 2025). Additionally, maintaining engagement among mid- and late-career teachers remains a critical concern (Day, 2019). However, educational indicators in Belgium (FWB, 2023) reveal a worrying trend: the rates of medical leave and reduced hours for medical reasons have respectively increased by 76.3% and 646% since 2014. It seems pertinent, therefore, to examine these less-visible reasons for departure and to develop alternatives to mitigate them. Addressing the working conditions of teachers is a complex topic that we propose to tackle at three levels: individual, organisational, and systemic. At the individual level, preventive interventions might aim to inform teachers of all ages about the long-term demands of the profession and to develop personal attributes such as socio-emotional skills (e.g., resilience, kindness, or empathy) to help them positively respond to contextual challenges (see Cahill & Dadvand, 2020).

Equipping teachers with strategies to optimise their work also appears to be a promising approach to allocating resources more effectively and reducing the sense of being overwhelmed by peripheral tasks. The primary aim is to encourage teachers to become active agents of change in their own professional environment and to take ownership of their careers and the regulation of their difficulties. In this sense, the focus should shift from a narrative of “enduring until retirement” to one of “remaining healthy and engaged in the activity” (Cau-Bareille, 2016, p. 133). At the organisational level, the literature consistently emphasises that disorganised relationships among teachers can undermine well-being (Mulholland et al., 2017). Conversely, satisfaction tends to increase within teaching teams that benefit from supportive leadership and personal development initiatives (Tang et al., 2020). Priority should thus be given to fostering a school climate that promotes inclusivity, mutual respect, and intergenerational learning. Admiraal and Røberg (2023) advocate for the implementation of training and coaching sessions to support teachers in managing job demands and to reduce the physical and psychological burdens experienced by late-career educators, as described by Zavidovique et al. (2018).

Furthermore, school leadership could formalise opportunities for dialogue among teachers, focusing on issues that are often overlooked and promoting reciprocal, intergenerational learning within a psychologically safe environment. Such exchanges can enhance professional relationships and ensure that the benefits extend to all staff members (see Geeraerts et al., 2018; Maillet & Marcoux, 2023). At the systemic level, promoting a comprehensive approach to mental health and well-being offers a valuable starting point. The NESET report (Cefai et al., 2021) recommends that education authorities actively support teachers in caring for their health and well-being (p. 11). Research has also identified several training programmes that deliver tangible benefits: for example, the ARC method (Cook et al., 2017) has been shown to reduce stress and increase job satisfaction; the Gordon training (Talvio et al., 2013) fosters socio-emotional skills and personal fulfilment; and the ENTRÉE

programme (Fernandes et al., 2019) helps reduce negative emotions and improve stress management.

Zavidovique et al. (2018) further argue that administrations could appoint occupational health doctors to observe the overall organisation and working conditions within schools, intervening proactively to prevent work-related distress. Coupled with longitudinal monitoring of teachers from the age of 50 onwards, these doctors' responsibilities would not only include listening, advising, and connecting teachers with preventative networks, but also managing sick leave documentation in cases of chronic illness or professional breakdowns, phenomena frequently observed in this study

8. Conclusion

Professional balance, often sought but difficult to achieve, becomes a major challenge for all teachers, particularly at the end of their careers (Cau-Bareille, 2017). The high demands of the profession, coupled with sometimes insufficient resources, make long-term practice complex, especially in the final stages of a teaching career. The results of this study show that teachers oscillate between a fragile balance and the acceptance of inevitable deterioration of their well-being in a system that struggles to meet their specific needs. Therefore, it is essential to prevent the sense of rupture felt by EFCs approaching a critical threshold and to establish a network of anticipatory, tailored, and personalized support. This would help sustain teachers in the long term and reduce staff turnover, preserving the stability of the educational environment and ensuring continuity in pedagogical approaches. This stability is crucial for the healthy development and growth of children in preschool educational settings (Whitebook et al., 2016).

Chapter 4

Personal resources at work: Understanding LCT' profiles

This study explores late-career teachers' engagement in professional learning activities in the context of early childhood education in Belgium. Using the job demands-resources model, this study draws on moderation mixture model to investigate the interaction between late-career teachers' engagement in professional learning activities (EPLA) and their personal resources, job resources, and job demands ($N = 183$). We found four distinct profiles and showed that the profile one belongs to affects the strength and direction of the relation between job demands and EPLA. Results are discussed in relation to limitations, implications for practice, and future research.

Keywords: Teachers' professional learning, job demands, job resources, personal resources, late-career teachers

Reference

Brouhier, Q., Coppe, T., März, V., & Raemdonck, I. (2023). Professional learning of late-career teachers in early childhood education: A matter of (im) balance between personal resources, job resources, and job demands. *Teaching and Teacher Education*, 133, 104273.

Personal resources at work: Understanding LCT profiles

1. Introduction

In recent decades, workforces in many countries have aged considerably (Organisation for Economic Co-operation and Development [OECD], 2019) and the retirement of these older workers will challenge organisations' stability as well as national social security systems (Taylor & Earl, 2016). As a result, numerous governments have raised the retirement age to 65 or even 67 years (OECD, 2019). Simultaneously, there has been a parallel trend of early retirement among older workers in certain employment settings, with the teaching profession being no exception (OECD, 2021). This poses a significant challenge for organisations in terms of knowledge loss, given that older teachers are valuable sources of competence and expertise (Cochran et al., 2012). While implementing worker-friendly measures to attract, retain, and retrain older workers (Appanah & Biggs, 2015), organisations in many countries still struggle with retaining experienced late-career teachers (LCT; Admiraal et al., 2021).

Moreover, the teaching profession is well known for its ever evolving and demanding nature, due to student heterogeneity, technological innovations, and the implementation of multiple educational reforms (Evers et al., 2016; Philipp & Kunter, 2013). This is especially true in the context of early childhood education (ECE), which serves as the primary focus of this study. In addition to the diverse physical demands arising from the child-sized environment, these stressors can generate chronic fatigue and health concerns, lead to burnout, and gradually impact ECE teachers' enthusiasm and motivation over time (Inbar & Shiri, 2021). Lack of professional resources, such as social support in later life, also impacts health, well-being, and engagement in professional activities (Lam, 2019; Mejía et al., 2017). In addition, literature on ageing has highlighted that personal resources are unevenly distributed across aged groups with respect to education, wealth, gender, and race (Holman & Walker, 2021), and that the ageing process impacts individuals differently (Kanfer & Ackerman, 2004). The demanding nature of this context can lead to premature attrition of LCT, prompting concerns about the quality of the late career phase in ECE. Additionally, it raises questions about the differences between LCT in personal resources that can help alleviate the challenging demands at play in this profession.

Furthermore, as lifelong learning has become a key issue in educational policies and research agendas (Papadakis & Drakaki, 2023), teachers are requested to continuously adapt their practice and participate in professional learning activities to update their knowledge, and maintain their motivation and work engagement (García & Weiss, 2019). However, the extent to which teachers in general – and LCT in particular – engage in professional learning activities remains a challenge (Jansen in de Wal et al., 2020). Teachers' performance of learning activities has previously been explained in terms of conditions in their work environments as well as their personal and psychological attributes (Admiraal et al., 2019). According to the job demands–resources model (JD–R), work-related conditions can be divided into two categories, job demands and job resources (Bakker & Demerouti, 2017). This model suggests that active learning occurs when environments have higher job resources

than demands (Evers et al., 2016). While the JD–R model has been particularly predictive of work engagement (Liu et al., 2023) and participation in self-directed learning (Blanco-Donoso et al., 2017), personal resources have also been found to influence the relationship between the two types of work-related conditions and work engagement (Xanthopoulou & Bakker, 2021).

Building upon the aforementioned reasons, this study pursues a twofold objective on the one hand, to identify profiles of late-career ECE teachers based on their personal resources and, on the other hand, to shed light on the differential effects (among the identified profiles) of job resources and demands on these teachers' engagement in professional learning activities. The study uses a person-centred approach that considers the existence of potential subpopulations in the sample that are characterized by differentiated sets of parameters (Meyer & Morin, 2016). It aims to investigate ECE teachers in French-speaking Belgium, a context characterised by a high concentration of LCT and a high rate of early retirement (Fédération Wallonie-Bruxelles [FWB], 2022). The research will explore how late-career teachers with distinct patterns of personal resources respond to job demands and available resources in relation to their engagement in professional learning activities.

2. Theoretical framework

This section is divided into four parts: a definition of late-career teachers; an overview of teachers' professional learning; a comprehensive explanation of the JD–R model, which includes the definition of job resources, job demands, and personal resources that are pivotal to our study; and last, the research questions that guided the study.

2.1 Late-career teachers

The educational literature presents various career stages for teachers, and one notable typology by Huberman (1989, 1995) identifies two phases towards the end of a teaching career. The first phase occurs between 19 and 30 years of job tenure, characterized by a “gradual loss of energy compensated by a greater sense of confidence and acceptance” (Huberman, 1989, p. 35). The second phase, spanning 31 to 40 years of experience, is marked by either feelings of disappointment and bitterness or a sense of serenity. Day and Gu (2007) also portrayed late-career teachers as those over 40 years of age and with over 24 years of teaching experience, experiencing a potential decrease in personal health and family concerns during their last 10–15 years (Day, 2017). In this study, late-career teachers are defined as individuals aged 40 years and above, who have accumulated a minimum of 19 years of experience in the teaching profession. This definition encompasses the criteria outlined by both Huberman (1995) and Day and Gu (2007).

2.2 Teachers' professional learning

The literature on teacher learning has been characterised by discussions aiming to clearly distinguish or rather unite the notions of teacher professional learning and professional development (Webster-Wright, 2009) the terms have been used interchangeably over the past two decades (Stewart, 2014). Once seen as discrete entities, *professional development* was understood as formal, one-size-fits-all, in-service or conference-style learning opportunities. *Professional learning* was understood as more active, collaborative, inquiry-based activities

in the workplace. Following Bleicher's (2014) suggestion that "the field of professional development is moving towards the notion of professional learning, highlighting the active learning role that teachers play in changing their knowledge bases, beliefs, and practice" (p. 802), this study will primarily use the concept of *professional learning*.

From a lifelong learning perspective, pre-service education is only the first necessary step in building teachers' knowledge. Thereafter, teachers are asked to continually engage in professional learning activities, which are all of learning experiences undertaken alone and with others (e.g., Avalos, 2011; Vanblaere & Devos, 2016), such as training, reading, experimenting, reflection, and collaboration (Kwakman, 2005). Buysse and colleagues (2009) suggested that they consist of "facilitated teaching and learning experiences that are transactional and designed to support the acquisition of professional knowledge, skills, and dispositions as well as the application of this knowledge in practice" (p. 239). While traditional learning took place in formal classroom-based settings, the idea of professional learning has expanded to include (informal) learning in the workplace as well (Cheetham & Chivers, 2001; Eraut, 2004). This study considers both formal and informal professional learning activities and different types (e.g., passive, active, and collaborative) of learning processes LCT can experience.

2.3 Job demands–resources model

The job demands–resources (JD–R) model from organisational psychology explains how work-related and personal characteristics can impact employee well-being and motivation (Schaufeli & Taris, 2014) but can also foster active engagement in learning and professional development activities (Evers et al., 2016). The model suggest that job demands deplete individuals through an impairment process resulting in stress, while job resources (e.g., social support and learning climate) can enhance engagement through a motivational process that reduces job demands and stimulates personal growth, learning, and development (Bakker & Demerouti, 2017). According to the model, *job demands* refer to physical, cognitive, and emotional efforts or skills that are associated with physiological and/or psychological costs (e.g., work overload). *Job resources* refer to physical, psychological, social, or organisational aspects of the work environment that are functional in achieving work goals (Bakker & Demerouti, 2017).

Recent research has indicated the importance of incorporating personal resources in the model, as individuals are recognised as "job crafters" who bring in their own characteristics to cope with their work environment (Grover et al., 2017). *Personal resources* refer to individuals' ability to control and influence their environment successfully (Xanthopoulou et al., 2012). Their integration in the model has been managed in different ways (Schaufeli & Taris, 2014). They have been included as antecedents of stress and motivation (Lorente Prieto et al., 2008), as moderators of the influence of job demands on outcomes (Grover et al., 2017), as a component of a common entity formed with job resources (Mayerl et al., 2016) or as mediators between job characteristics and outcomes (Huang et al., 2016).

As the definition implies, the negative effect of high job demands that increase stress should be mitigated by high levels of personal resources (see Grover et al., 2017), whereas the positive effects of high job resources on motivation could be strengthened by high personal resources (Taris & Schaufeli, 2015). In line with Van Den Broeck et al. (2010), we therefore consider personal resources as moderators that influence the relationships between job characteristics and engagement in professional learning activities.

2.4 Teachers' personal resources

Recent research has examined the role of psychological capital (self-efficacy, resilience, hope, and optimism) as a personal resource (Paterson et al., 2014). Grover and colleagues (2018) found that psychological capital had a direct impact on job perceptions, but did not serve as a coping mechanism. In line with the current literature, which considers teachers as "job creators" and active agents of their own transformation (see Brouhier et al., 2020; Van Wingerden et al., 2017), this study considers personal resources such as teachers' ability to self-regulate (Lord et al., 2010), to employ strategies that facilitate resource allocation, and to contribute to successful adaptation to their work environment (Lang et al., 2011). These resources are defined in terms of resilience and teachers' self-efficacy (two concepts derived from the construct of psychological capital), along with two concepts from developmental psychology that relate to the ageing process: occupational future-time perspective and selection, optimisation, and compensation strategies.

First, *resilience* refers to a teacher's ability to maintain commitment across the course of their career, deploying a series of strategies to cope with and overcome unpleasant and stressful situations in their professional and personal life (Brunetti, 2006; Castro et al., 2010).

Second, teachers' self-efficacy corresponds to their beliefs and attitudes regarding their ability to enhance students' learning (Tschannen-Moran & Woolfolk-Hoy, 2001). Extensive psychological literature has described self-efficacy as a key predictor of intentions, choices, persistence, and feelings during task completion (Bandura, 1997). Following Maurer's (2001) hypothesis, the concept of *self-efficacy for learning and development*, or one's confidence in learning and developing new skills, has been identified as a key element in the relationships between attitudes, intentions, and participation in professional development activities (Maurer & Palmer, 1999).

Third, the literature suggests that *selection, optimisation, and compensation (SOC) strategies* are crucial for individuals to increase their resources and maintain high levels of functioning over time (Baltes, 1997). LCT use these strategies to focus on core teaching tasks, reduce administrative tasks, and optimise their time (Philipp & Kunter, 2013). Selection involves prioritising goals or tasks for which resources can be captured (Lang et al., 2011) and channelling teachers' development (Baltes & Heydens-Gahir, 2003). Optimisation refers to refining ways to achieve goals and develop new skills (e.g., a teacher acquires an interactive whiteboard and learns to use it through peer training and instructional videos). Compensation involves using alternatives to maintain a given level of functioning. These strategies become increasingly important as resources become scarce, such as when approaching retirement (Carstensen et al., 2003).

Finally, *occupational future-time perspective* (OFTP) is important in teachers' career decision-making process and motivation. OFTP refers to professionals' perception of their remaining opportunities and time at work (Zacher & Frese, 2009), manifesting itself differently at different career stages. The educational literature has highlighted the significance of OFTP in teachers' beliefs, aspirations, and professional plans (Eren, 2012; Eren & Tezel, 2010), especially in a context with limited career possibilities and opportunities (Schleicher, 2012).

2.5 Teachers' job demands and job resources

The physical and emotional demands of the teaching profession, particularly for ECE teachers, have been well-documented in the literature (see H  lou & Lantheaume, 2008; Tsai et al., 2006). ECE teachers frequently encounter challenging physical work environments (Cassidy et al., 2017). Their daily activities involve constant movement, requiring diverse types of *physical effort* (bending, stooping, squatting, lifting and carrying children). Moreover, working in a child-sized environment can have detrimental effects on their physical well-being (Randall et al., 2023), potentially leading to chronic fatigue or burnout (Inbar & Shiri, 2021). The *emotionally and cognitively demanding nature* of the profession (see Paquette & Rieg, 2016) can also result in lower self-efficacy, especially after 25 years of teaching experience (Day & Gu, 2007).

Research has also highlighted the challenges faced by ECE teacher who work in a child-centred and nurturing classroom setting (Madrid & Dunn-Kenney, 2010). Recent intensification of *changes in teaching* (i.e., expanding responsibilities, teacher assessment, innovations, etc.; Bullough et al., 2014) and raising of educational standards have increased teacher workload (Cassidy et al., 2017) and have made it difficult for ECE teachers to reconcile competing work–life obligations and to manage feelings of frustration and stress (Jena-Crottet, 2017).

Conversely, research has shown that positive aspects of teachers' environment can help balance job demands (Schaufeli & Taris, 2014). *Social support from colleagues and principals* constitutes a crucial job resource that has been associated with increased job satisfaction (Viotti et al., 2020) and improved well-being among teachers (Hur et al., 2016). *Autonomy*, another significant aspect, encompasses the freedom to make professional decisions and engage in collaborative decision-making (Vangrieken et al., 2017). This type of autonomy holds great value in teachers' day-to-day lives (Viotti et al., 2020) and has been shown to influence their professional status and job satisfaction (Strong & Yoshida, 2014). Additionally, ongoing professional learning is essential for sustaining teachers' engagement and improving instructional quality (Burchinal, 2018), making the provision of (in)formal *opportunities for professional development* a crucial job resource for teachers.

2.6 Research questions

This study aims to identify and describe the heterogeneity of profiles of LCT based on different personal resources. Moreover, the relationship between the profiles and teachers' engagement in professional learning activities is investigated, along with differences between profiles regarding the relationship between job demands and job resources and teachers' engagement in professional learning activities. This study examines the following three research questions:

RQ1. What profiles emerge for LCT ECE teachers when considering specific combinations of personal resources (i.e., OFTP, SOC, resilience, and self-efficacy for learning and development)?

RQ2. To what extent do these profiles predict engagement in professional learning activities?

RQ3. What role do these profiles play in the relationship between job demands/job resources and engagement in professional learning activities?

3. Methods

3.1 Context of the study

The teaching workforce in the French-speaking part of Belgium is predominantly composed of women, with a significant concentration of teachers around the age of 50 (FWB, 2021). This is not without consequence, as research shows that female LCT in ECE may experience more fatigue than men due to work–family management (Illies et al., 2015) and menopause. This fatigue creates a physiological and physical imbalance that can, in turn, impact these women's working life (Cau-Bareille, 2014). However, the support system for teachers in Belgium is not as formalised as in other countries. There are only two official avenues to address difficulties related to the profession: the annual interview with school management, which depends on a good relationship with the principal and occupational medicine, typically consulted when teachers have already been exposed to psychosocial risks.

3.2 Participants and procedure

The study collected responses to a two-part self-report questionnaire from 183 early childhood education teachers (including preschool and primary teachers¹) with an average age of 55 (range between 49 and 64) and a minimum of 19 years of experience. The first part covered socio-demographic information, while the second part contained self-report measures assessing personal resources, job demands, job resources, and teachers' engagement in professional learning activities². With the help of two trained junior researchers, data were collected through online questionnaires via ECE teacher groups on social media and paper-

¹ In the French-speaking part of Belgium, teachers with an ECE diploma are allowed to teach up to the second year of primary school.

² According to Administrative Circular 8742, teachers in French-speaking Belgium are required to participate in 6 half-days of training each year. These trainings can be provided by various organizations related to the education system and must cover topics related to focal concerns of the Belgian education system or those identified in the schools' training plan. Teachers can attend voluntary courses for up to 10 half-days per school year.

based questionnaires administered by and retrieved from cooperating school secretariats in Brussels, Liège, and Namur. The participants consented to participate in the study after the first author explained relevant details and answered their questions. Demographic information for the participants is given in Table 6.

Table 6. Demographic information for the participants (n = 183)

	Mean (SD)	Range
Chronological age (in years)	55.1 (6.28)	49-64
Job tenure (in years)	28.79 (6.64)	19-42
	Frequency (%)	
Gender		
Female	159 (86.9)	
Male	24 (13.1)	
Educational level		
Kindergarten/Pre-school	63 (34.4)	
Primary school	120 (65.6)	

3.3 Measures

The measurement models and corresponding fit indices for the variables presented in the following sections are shown in Figure 3. Overall, the 12 variables demonstrated acceptable to good internal consistency following Little's (2013) cut-offs, as shown in Table 7. Extreme values of CFI and TLI ranged from .90 (job demands) to .97 (job resources). Extreme values of SRMR and RMSEA ranged from .074 (personal resources) to .05 (job resources).

All subscales used were translated into French for our participants, but are reported in this article in English, in their original version. For every questionnaire used in this study, instructions were added to contextualize the items to schools. When needed, the instruments were translated into French with a classic back-translation approach (Brislin et al., 1973). The instruments are available upon request from the first author.

3.3.1 Personal resources

Resilience was measured with the 12-item Resilience Appraisal Scale (RAS) developed by Johnson and colleagues (2010). Participants indicated to what extent each statement applied to them using a 5-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). This scale is made up of three sub-scales measuring individuals' ability to cope with emotions, solve problems, and seek help from someone (e.g., "I can put up with my negative emotions", "I can generally solve problems that occur", "If I were in trouble, I know people who would be willing to help me", respectively).

Teachers' self-efficacy for learning and development (TSELD) was measured using a 6-item instrument originally created by Fletcher et al. (1992) that assesses teachers' efficacy beliefs, confidence, and capacity to learn and engage in learning and development activities in the workplace (Armstrong-Stassen, 2008). Participants answered on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*; e.g., "I have the ability to develop new work-related skills").

Occupational future-time perspective (OFTP) was measured with an adapted version of the 11-item scale developed by Carstensen and Lang (1996). The five items used were assessed on a 7-point scale ranging from 1 (*does not apply at all*) to 7 (*applies completely*). Only one of Lang and Carstensen's (2002) two dimensions of OFTP was measured (i.e., remaining opportunities) which we adapted by adding the word "at school" to each item (e.g., "My professional future at school is full of possibilities").

Selection, optimisation, and compensation strategies (SOC) were measured with the scales from Abraham and Hansson (1995). Responses used on a 6-point scale (1 = *not at all*; 6 = *to a very great extent*). Selection was measured with four items, with an example being: "I now delegate low-priority responsibilities to others". Optimisation was measured with four items, for example: "I now try to polish rusty skills and abilities so that my job performance won't suffer". Finally, compensation was measured with four items. An example is: "I am now more careful about how I present myself to others at school".

3.3.2 Job resources

Job resources were operationalised using four variables: autonomy, social support from colleagues, support from principal, and opportunities for development.

Autonomy was measured using a 3-item scale from Bakker and colleagues (2004; e.g., "In my work, I have the freedom to decide what to do"). Both *social support from colleagues* and *support from principal* were measured using 4-item scales translated into French and validated by Lequeurre and colleagues (2013). Example items include "In your work, can you count on your colleagues when you encounter difficulties?" and "In your work, can you rely on your principal when you encounter difficulties?". Opportunities for development was measured with a 3-item scale, also from Lequeurre and colleagues (2013; e.g., "My job gives me the opportunity to learn new things"). All of the subscales were rated on a 7-point Likert scale ranging from 1 (*never*) to 7 (*always*).

3.3.3 Job demands

Job demands were operationalised using three concepts: *Physical effort* (4 items, e.g., "In your daily work, are you bothered by carrying or moving loads?"), *mental and emotional demands* (8 items, e.g., "Does your job require a high level of alertness?") and *changes in tasks* (3 items, e.g., "Have the proposed changes in your work activities been well presented?"). Subscales were taken from the questionnaire by Van Veldhoven and Meijman (1994), translated into French, and validated by Lequeurre et al. (2013). All of the subscales were rated on a 7-point Likert scale ranging from 1 (*never*) to 7 (*always*).

3.3.4 Outcome: Engagement in professional learning activities

Engagement in professional learning activities (EPLA) was measured based on an abridged version of the 24-item scale of Evers and colleagues (2016), with responses ranging from 1 (*hardly ever*) to 4 (*often*), as teachers were asked to indicate how often they participate and engage in professional learning activities. This scale is divided into five dimensions, which are: (1) *keeping up-to-date* (4 items: “Participating in a one-day conference or study day that centres around subject matter pedagogy”), (2) *experimenting* (5 items: “Trying out new teaching methods in my lesson”), (3) *reflecting and asking for feedback* (5 items: “Inviting colleagues to attend my lesson”), (4) *collaborating with colleagues with the aim of improving lessons* (5 items: “I discuss lessons with colleagues in a learning environment with digital tools”), and (5) *collaborating with colleagues with the aim of improving school development* (5 items: “Assembling a school working group or committee with colleagues”; Evers et al., 2016).

Table 7. Cronbach alphas, means, and standard deviations for all measures

<i>N</i> = 183	α	Mean (SD)
Personal resources		
Resilience (12 items)	.865	46.69 (5.38)
OFTP (5 items)	.891	18.18 (3.95)
SOC strategies (12 items)		14.60 (2.57)
Selection	.720	
Optimisation	.830	
Compensation	.830	
TSELD (6 items)	.829	23.09 (3.88)
Job Resources		
Autonomy (3 items)	.889	17.77 (2.45)
Social support from colleagues (4 items)	.882	23.78 (3.29)
Social support from principal (4 items)	.917	22.21 (5.56)
Opportunities for development (3 items)	.836	15.90 (3.53)
Job Demands		
Mental and emotional demands (8 items)	.817	42.50 (6.28)
Changes in task (3 items)	.813	11.11 (2.99)
Physical efforts (4 items)	.860	13.05 (6.01)
Engagement in professional learning activities (24 items)	.889	35.39 (7.51)

3.4 Analytical procedure

Before presenting our analytical routine, we briefly present a description of mixture modelling. These models are common when choosing a person-centred approach but may be less well-known for readers familiar with variable-centred approaches.

3.4.1 Mixture modelling: LPA and mixture moderation

Mixture modelling is a widely utilised statistical method in social science research used to identify unobserved subgroups within a population (i.e., latent groups). Latent profile analysis (LPA), a type of mixture model, uses a set of indicators to estimate the model and identify subgroups or “profiles”. The primary purpose of LPA is to find the number and patterns of heterogeneous subgroups within a population based on the response patterns for several indicators. For a more comprehensive look at LPA, see Spurk and colleagues (2020).

Latent profile models can be extended to include auxiliary variables, including covariates, predictors, and distal outcomes, which consequently allows the exploration of the moderation effects of such variables. With a latent class variable, moderation allows for estimating regression parameters freely across the different latent classes in order to test the differential effects across profiles between antecedents and outcomes (McLarnon & O’Neill, 2018). Latent profile models can be understood as multigroup freely estimated models³. Put differently, in the moderation mixture model, latent class membership (and its uncertainty) is used as a categorical moderator between the independent and dependent variables.

3.4.2 Data analysis

First, we extracted factor scores for the latent profile indicators (RAS, SOC, OFTP, TSELD); for the two predictors (JR, JD), given our interest in the main JD and JR constructs and not in their subdimensions; and for engagement in professional learning activities as the outcome. These factor scores were extracted from the CFA models reported in the measurement section and shown in Figure 1. Using factor scores is recommended for latent profile analysis and more complex mixture models (such as latent profile moderation models), as factor scores control partially for measurement errors and are a stronger alternative than traditional mean scores (see Morin et al., 2016, for a discussion on the use of factor scores).

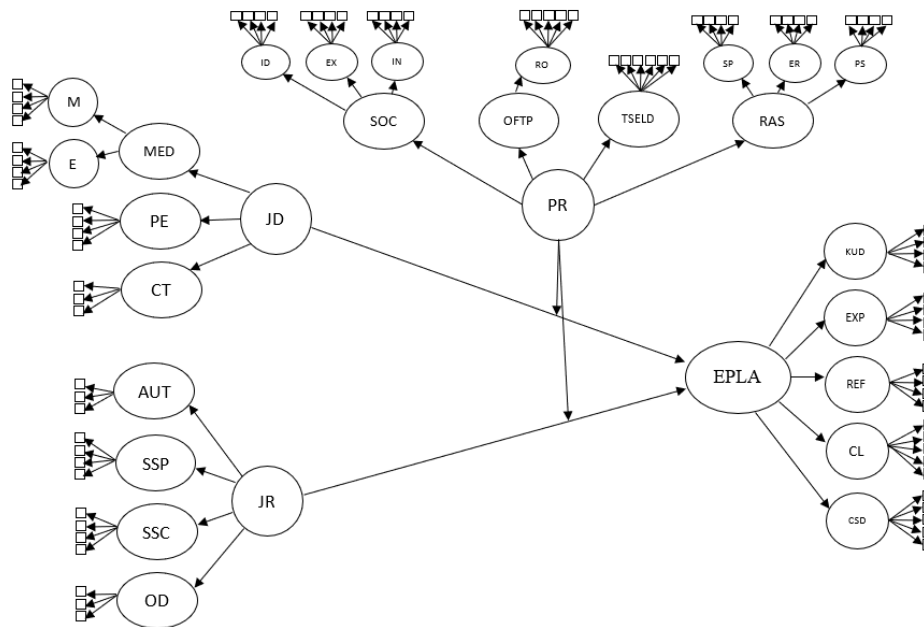
Second, to answer our first research question, we performed latent profile analysis to generate and choose the best latent profile solution. We extracted 1 to 8 profile solutions, shown in Table 3. These analyses were performed without any auxiliary variables, as recommended for the generation and choice of the best profile solution (Nylund-Gibson & Choi, 2018). We allowed means and variances to vary between profiles, as recommended (Morin et al., 2011). We used multiple fit indices to evaluate and choose the best profile solution: consistent Akaike's information criterion (CAIC), Bayesian information criterion (BIC), sample-size adjusted BIC (SABIC), adjusted Lo-Mendell-Rubin likelihood ratio test (aLMR), bootstrap likelihood ratio test (BLRT), and entropy. For CAIC, BIC, and SABIC, lower values indicate a better fitting model (Masyn, 2013). For aLMR and BLRT, a significant p -value ($< .05$) indicates that this solution with k profiles is not better than the $k-1$ profiles solution (Nylund et al., 2007). In addition to these fit indices, the choice of the best profile solution must be

³ With the distinction that LPA considers the probabilities of profile membership.

driven by the meaning of the profiles (Marsh et al., 2009). Therefore, we combined multiple fit index approaches and qualitative interpretation of the meanings of the profiles to choose the best solution (highlighted in Table 8).

Third, we also tested the predictive relationship between the profiles and the teachers' engagement in professional learning activities. For that, we ran Wald chi-square tests of mean comparisons between profiles. This test is similar to ANOVA but considers the profile membership probabilities (DU3STEP command in Mplus).

Fourth, to test for moderation and to answer our third research question, we freely estimated the paths between the antecedents (JD/JR) and the outcomes (engagement in professional learning activities) across the different profiles. This can be understood simply as using profile membership (and its uncertainty) as a categorical moderator between JD and JR and the outcome variable engagement in learning activities. The omnibus Wald chi-square allows for testing the (non-)equivalence between the regression coefficients of the slopes across the different profiles. If this test is significant, there is evidence that at least one slope is significantly different from the others. To further evaluate which slopes were significantly different, we conducted pairwise difference tests. These pairwise tests of differences can be understood as post-hoc tests of differences between two profiles' slopes. Additionally, we tested the (non-)equivalence of the regression intercepts, which in this context represents the mean of the distal outcome, using the Wald chi-square test. For this test, we checked for significant differences in the intercept across the latent classes. If there is evidence of a difference, then pairwise comparisons of the intercepts are performed.



Indices of Fit

Personal Resources	Job Demands	Job Resources	EPLA
$\chi^2 = 538.929 (.000)$	$\chi^2 = 177.516 (.000)$	$\chi^2 = 126.940 (.003)$	$\chi^2 = 123.991 (.000)$
RMSEA = 0.06	RMSEA = 0.065	RMSEA = 0.05	RMSEA = 0.061
CFI = 0.914	CFI = 0.916	CFI = 0.970	CFI = 0.920
TLI = 0.904	TLI = 0.900	TLI = 0.963	TLI = 0.90
SRMR = 0.074	SRMR = 0.063	SRMR = 0.068	SRMR = 0.066

* PR refers to personal resources' profiles. Fit indices reported for personal resources refer to a four-factor first-order model allowing estimation of a profile solution with four indicators.

Figure 3. Path diagram: The relationship between job demands, job resources, and engagement in professional learning activities, moderated by personal resources latent profiles

Table 8. Fit indices and class sizes (One to eight profiles)

<i>k</i>	LL	fp	SC	CAIC	BIC	SABIC	aLMR	BLRT	Entropy	SPF
1 profile	-791.54	8	1.28	1599.08	1419.68	1599.42	/	/	/	/
2 profiles	-692.84	17	1.14	1624.76	1474.24	1420.39	0.00	0.00	0.80	0.40
3 profiles	-646.83	26	1.06	1345.66	1429.10	1346.76	0.00	0.00	0.81	0.23
4 profiles	-614.05	35	1.29	1299.57	1410.43	1299.57	0.44	0.00	0.86	0.10
5 profiles	-590.98	44	1.06	1269.96	1411.18	1271.82	0.02	0.00	0.87	0.01
6 profiles	-579.41	53	1.02	1264.82	1434.92	1258.87	0.39	0.00	0.85	0.01
7 profiles	-560.27	62	0.92	1244.54	1443.53	1247.16	0.09	0.00	0.85	0.01
8 profiles	-546.22	71	0.97	1234.43	1462.30	1237.43	0.03	0.05	0.86	0.01

Note: LL = model log likelihood; fp = number of free parameters; SPF = smallest profile frequency

4. Results

The presentation of the results begins with the profile identification results for the LPA models (RQ1), followed by the predictive models (RQ2), and the mixture moderation model (RQ3). Then, the different linear estimations (i.e., slopes) of the relation between antecedents and distal outcomes across profiles are visually presented to show the results for the mixture moderation model.

4.1 Identification of the profiles

The fit indices and class sizes (number of profiles) can be found in Table 7. The aLMR and BLRT were significant for the model with four profiles. The AIC and BIC tended to stabilize in the four-profile model. Based on these results, the three- or four-profile solution could be selected. Marsh et al. (2009) recommended opting for a meaningful interpretive model before looking at the fit indices. In line with this recommendation, we also reflected upon the qualitative richness of the solutions and concluded that the four-profile solution was the best choice. A representation of the four profiles based on the latent factor scores for the four dimensions used for the profiling is given in Figure 4. The profiles are described in the following paragraphs.

Profile 1 was the majority profile in the sample. We labelled this as the “Neutral stance profile”; about 40.4% of the participants were assigned to this profile. LCT belonging to profile 1 were characterised by factor scores close to 0 on every variable of the personal resources construct: SOC (0.09), OFTP (-0.01), RAS (-0.06), and TSELD (-0.06). Teachers in this profile showed scores near the sample mean on each dimension used in the profiling. As such, they represent a subpopulation without predominance or lack of any particular personal resource.

The second most often presented profile in our sample was *Profile 2*. We decided to call it the “Poorly equipped” profile. This profile included 35% of our sample, and LCT belonging to this profile were characterised by having the most negative factor score on each variable: SOC (-0.34), OFTP (-0.50), RAS (-0.17), and TSELD (-0.58). This means that teachers in this profile reported lower scores for each dimension of personal resources than the mean of the entire sample.

Profile 3 included 14.7% of the sample, and we labelled it the “Resilient” profile. Teachers assigned to this profile showed an average factor score for SOC (0.06), the highest factor score in terms of resilience (RAS, 0.62), and positive factor scores for OFTP (0.53) and self-efficacy (0.98). In other words, they showed an average ability to select, optimise, and compensate for their teaching tasks, they had higher expectations regarding their future opportunities as teachers, and they were the most resilient teachers in the sample.

Finally, *Profile 4*, called the “Well-equipped profile”, included 10% of the sample. Teachers in this profile showed an average factor score for resilience (0.01) and the highest factor scores in terms of SOC (0.83), OFTP (1.12), and self-efficacy (1.03). These LCT showed a sense of resilience close to the mean in the sample; on the other hand, they showed self-confidence in learning and developing their skills, showed the ability to optimise their

performance of their teaching tasks, and perceived more opportunities as they gain experience in the profession.

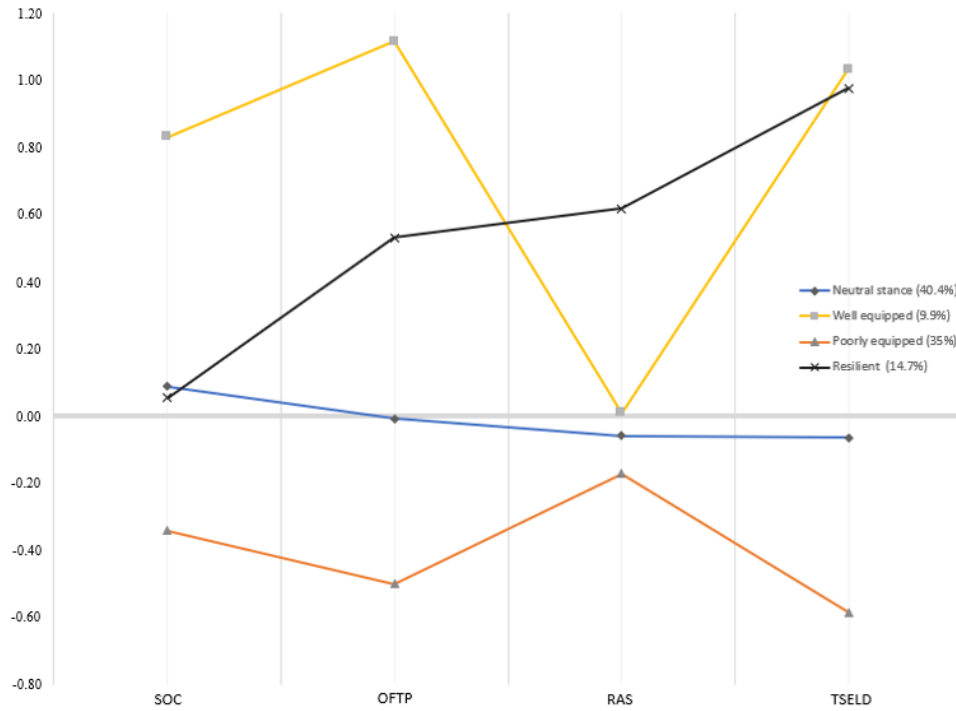


Figure 4. Model with four profiles (latent factor scores)

4.2 Differences in terms of engagement in professional learning activities

Looking at the relationship between the four profiles and teachers' engagement in professional learning activities, significant differences were found (Wald $\chi^2(2) = 90.08$; $p < .001$) with a meaningful latent means classification: $M_1 = -0.045$, $M_2 = -0.12$, $M_3 = 0.137$, $M_4 = 0.366$ for profiles 1 to 4, respectively. Regarding the profile-to-profile differences (detailed in Table 9), we can conclude that the Neutral stance profile was significantly different from the Well-equipped profile ($p < .001$), that the Poorly equipped profile was also significantly different from the Well-equipped profile ($p < .001$), and that the Poorly equipped profile was marginally significantly different from the Resilient profile. However, the Resilient and Well-equipped profiles were not significantly different ($p > .05$) in terms of engagement in professional learning activities. These results make sense in relation to the identification of our profiles. Indeed, this supports the assumption that the way LCT experience their personal resources in their late-career phase differs. Some generate strategies and have personal resources that are more in line with engagement in professional learning activities, while others with fewer personal resources do not engage in such activities.

Table 9. Means and pairwise comparisons of differences in engagement in professional learning activities for the four profiles

	P1	P2	P3	P4	Wald Chi-Square (DU3STEP)					
					1 vs 2	1 vs 3	1 vs 4	2 vs 3	2 vs 4	3 vs 4
EPL	-	-								
A	0.045	0.12	0.137	0.366	0.41	0.125	.000* **	.037*	.00* **	.066

* $p < .05$; ** $p < .01$, *** $p < .0001$

4.3 Exploring the moderating role of LCT profiles

Finally, we were interested in examining the differential relationships between the antecedents and engagement in professional learning activities across the four profiles identified. The next step of the analysis was to carry out an overall test of equivalence of the regression (omnibus Wald test, slopes freely estimated across the profiles) of job demands and job resources on EPLA across the latent profiles. We ran two separate models: the first with the interaction effects on job demands, controlling for job resources; the second with the interaction effects on job resources, controlling for job demands. First, an overall difference between the regression coefficients of the slopes across the latent profiles was identified as significant (Wald Chi-square test $p = 0.006$) for the relationship between job demands and engagement in professional learning activities. As there was evidence of this moderation (e.g., significant Wald test), pairwise comparisons of the regression slopes across profiles were justified. Next, a second omnibus test was used to explore differences in the intercepts of the distal outcome (EPLA) across profiles. As the second Wald Chi-square test was significant ($p = 0.000$), pairwise intercept comparisons across classes were warranted. Figure 5 presents the relationships between the slope and intercept parameters estimated independently for each latent profile with regard to job demands. In this graph, the x -axis is fixed to be uncentred and unscaled. In addition, Table 10 presents an organised table of the slope values across each latent profile and pairwise comparisons of slope differences.

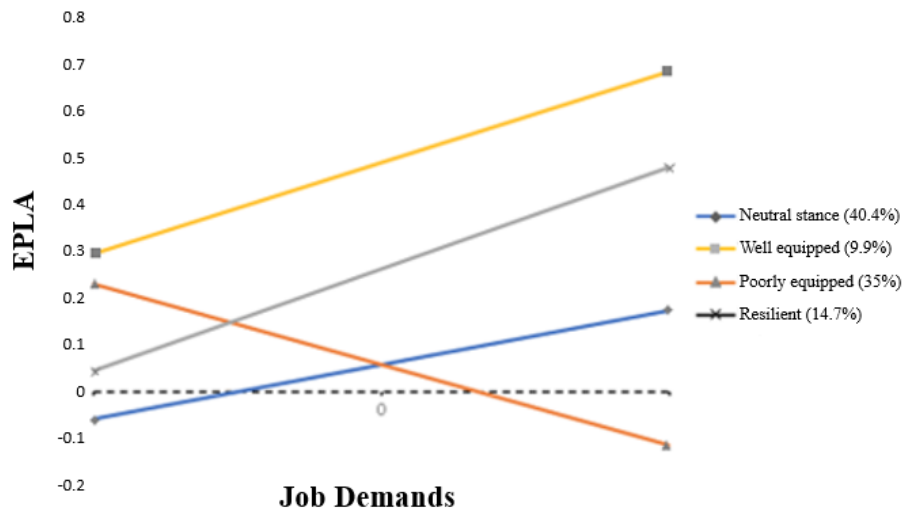


Figure 5. Simple slopes graph of job demands predicted by engagement in professional learning activities

F

Table 10. Regression coefficient values across personal resources profiles (job demands → engagement in professional learning activities), and differences between coefficients across profiles.

Regression coefficient				
Omnibus Wald Test				
<i>k</i>	Profile label	Estimate (<i>se</i>)	<i>R</i> ²	Sig. profile differences
P1 <i>n</i> = 68	Neutral stance	0.116 (.08) ⁺	.06	P2**
P2 <i>n</i> = 60	Poorly equipped	-0.173 (.07) *	.17	P1**, P3**, P4**
P3 <i>n</i> = 26	Resilient	0.218 (.10) *	.17	P2**
P4 <i>n</i> = 18	Well equipped	0.195 (.07) **	.28	P2**

Note: ⁺ Marginally significant; * $p < .05$; ** $p < .01$, *** $p < .0001$

A closer look at Table 9 shows that the differential effect of job demands on engagement in professional learning activities was only evident for the Poorly equipped profile, which differed from all of the other profiles. Teachers belonging to the Poorly equipped profile tended to engage less in professional learning activities as job demands increased. The R^2 value ($R^2 = .17$) indicates that 17% of the variation in the EPLA values was accounted for by the job demands values for this specific profile. However, teachers belonging to the Resilient profile had the tendency to engage more in these learning activities when job demands increased. The R^2 value ($R^2 = .17$) also indicates that the job demands values accounted for 17% of the variation in the EPLA values. Findings also indicated that the Well-equipped profile had a marginally significant ($p = 0.06$) positive relationship between job demands and engagement in professional learning activities.

Moreover, no evidence of a moderating role of the profiles was found in the relationship between job resources and EPLA (see Table 11). Job resources had a positive effect on professional learning activities independent of the personal resources of individuals. A significant p -value ($p = .013$) for the Poorly equipped profile ($p = .013$) indicates that these teachers seized upon job resources to engage more in professional learning activities. Eight percent of the variation in EPLA for these teachers was explained by job resources ($R^2 = .08$). In the same vein, teachers belonging to the Resilient profile also took advantage of job resources to engage more in professional learning activities ($p = .031$). Eighteen percent of the variation in EPLA values for these teachers was explained by job resources.

Table 11. Regression coefficient values across personal resources profiles (job resources → engagement in professional learning activities), and differences between coefficients across profiles.

Regression coefficient				
Omnibus Wald Test				
<i>k</i>	Profile label	Estimate (<i>se</i>)	<i>R</i> ²	Sig. profile differences
P1 <i>n</i> = 68	Neutral stance	0.089 (.35)	.03	-
P2 <i>n</i> = 60	Poorly equipped	0.156 (.013) *	.08	-
P3 <i>n</i> = 26	Resilient	0.269 (.031) *	.18	-
P4 <i>n</i> = 18	Well-equipped	0.156 (.35)	.12	-

* $p < .05$; ** $p < .01$; *** $p < .0001$

5. Discussion

With regard to our findings, the discussion will present the theoretical implications of this study, outline its limitations, and propose perspectives for future research and practice.

5.1 Theoretical implications

First, this study has identified the existence of four personal resources profiles within a sample of LCT in early childhood education. This finding contributes to a more nuanced understanding of this specific group of teachers, counteracting the tendency in teacher research to portray a binary view of LCT. On the one hand, they are often perceived from a negative perspective as being at a higher risk of being less effective (Day & Gu, 2007), dissatisfied at work (Ponnock et al., 2018), more likely to be exhausted, burnt-out, and fuelling attrition statistics (Ballantyne & Retell, 2020). On the other hand, from a positive perspective, they are described as outstanding teachers (Lowe et al., 2019), resilient, and highly dedicated to their profession (Carrillo & Flores, 2018). In line with the conclusions of Babic and colleague (2022), our study invites other authors to investigate the potential diversity of this category of professionals, given the challenges education faces as a context already known for its falling attractiveness, its shortages, and a workforce that is expected to become increasingly older in the years to come.

Moreover, our findings showed a moderating role of these profiles in the relation between job demands and EPLA, but not between job resources and EPLA. Although this differs from several studies found in the literature (Boyd et al., 2011; Van den Broeck et al., 2010), this result is not surprising, given the fact that teaching is known as a “flat” profession where promotions (almost) do not exist, and vertical step-up does not exist much apart from what teachers consider to be a complete change of profession – taking a position as principal, for example (Kelchtermans, 2017). We would argue that benefiting from job resources is not a matter of being willing to evolve in the career: it is a necessity for survival. Thus, it concerns most teachers, and not only those with more personal resources or a specific pattern of personal resources. Teachers therefore have an interest in seizing upon job resources to

overcome hindering job demands. This is true for most teachers, not just those with a specific pattern of personal resources. In that case, development opportunities, peer support, and principal support, as the most accessible sources of job satisfaction, are linked with what happens in their classrooms. These forms of support are well known to be important professional resources that act as a buffer against the negative effect caused by a very demanding profession (Collie & Martin, 2017). In investigating teachers' working conditions, Jeon and colleagues (2018) also highlighted the importance of a positive perception of working conditions, which acts as a potential reducer of burnout, emotional exhaustion, and occupational stress. It is therefore important to intervene to change teachers' perception of their working environment and, as advocated by Wells (2015), to support their social and emotional skills, in order to diminish their intention to leave the profession.

Furthermore, teachers belonging to two particular personal resources profiles (i.e., the Resilient and the Well-equipped profiles) respond to job demands by engaging in professional learning activities to overcome these demands. This means that LCT with a positive pattern of personal resources can cope with job demands, as these demands push them to evolve and engage in learning activities. However, LCT with a poor pattern of personal resources are more likely to be overwhelmed by the pressure of these demands. With the same conclusions as Van den Broeck and colleagues (2010), this result also highlights the need to differentiate job demands into two types: challenges, which are associated with a more adaptive posture (Tremblay & Messervey, 2011) when individuals evaluate job demands positively (Li et al., 2020), and hindrances, which create work overload and can ultimately be experienced negatively (Tadić et al., 2015).

5.2 Limitations

Notwithstanding the significant research findings of this study, several limitations need to be considered. First, given its cross-sectional nature, this study was unable to ascertain causal ordering. Employing longitudinal or experimental designs will be important in future research. Second, 183 participants represent quite a small sample size to perform moderation mixture models. A larger sample would be more adequate to guarantee robust analysis and, therefore, guarantee the similarity of profile solutions across subpopulations (see also Spurk et al., 2020). In addition to this, the nature of the sample in this research could be improved, as there was a low percentage of teachers around 65 years old in our sample, who were in the last few years of their career. Future research could consider focusing on those last few years for teachers in early education, taking a look at their emotional and cognitive anticipation of retirement and the transition to a pension, as we know from the literature that these years are critical (Randall et al., 2023).

Despite the less widespread usage of the JD–R in teacher research, the model was indirectly validated through this study, given the observed first-order measures and acceptable-to-good fit indices of the second-order factors, as shown by Figure 3. The variables used to represent the nature of job resources and demands in the teaching profession seem to measure the reality of LCT well. The combination of personal resources we proposed was selected based on research insights that consider teachers as agents of their own change and having a certain sense of agency. Other personal resources may be at play in the reality of teaching, such as organisation-based self-esteem, optimism or proactivity (e.g., Alonso et al., 2019; Peng et al., 2019). In addition, recent findings about teachers' self-efficacy have emphasized an

organisational dimension that takes into account the social-cognitive embeddedness of efficacy beliefs in schools, namely, collective efficacy (see Goddard et al., 2004; Strahan Née Brown et al., 2019). Collective efficacy refers to teachers' beliefs that their school as a whole is capable of carrying out the missions it is pursuing (Bandura, 1997). The self-efficacy construct evaluated in this study did not permit us to consider perceptions of collective efficacy, which could have influenced teachers' individual perceptions of their own effectiveness. Future research might consider examining these other personal resources identified in the literature or investigate other meaningful contextual resources (collective efficacy and other forms of support, for example).

5.3 Implications for future research and practice

Several authors have described the changing nature of working conditions in ECE, because of locally differing socio-political systems and structures (Løvgren, 2016; Schreyer & Krause, 2016). It is by definition difficult to foresee a specific direction for research aiming to support professionals in dealing with the stressors they face and to ensure their positive experience of the job in its final phase (Cumming, 2017). That being said, this study considers the interaction of job demands, job resources, and personal resources, which significantly constitutes the reality of professionals. It would be interesting to continue in this direction. Future research could also, as Hall-Kenyon et al. (2014) suggested, conduct a richer examination of teachers' lives and profiles through qualitative inquiry, to better know how they develop coping strategies and make use of resilience to deal with the challenging aspects of the profession. Furthermore, approaches that tell us what works in this type of environment are not to be left out. Therefore, in line with the suggestions by Jeon and colleagues (2017), a promising starting point would be to promote intervention studies aiming to develop organisation-wide measures, raise awareness, anticipate difficulties, and develop personal resources among teachers through professional development opportunities, and also to better accompany their transition to retirement. Moreover, from a policy point of view, LCT are an important part of the teaching workforce, whose number will increase in the coming decades (Ingersoll & Merrill, 2013). Over the course of their careers, they have accumulated different skills and competences that could be profitable for other generations of teachers. Considering them as assets in the school organisation can also be an important prerequisite, as enhancing job resources may address the retention issue in teaching. Moreover, keeping them at work in favourable conditions and giving them the opportunity to develop, while making them aware of strategies for adapting to changing job conditions, will also keep them active for longer. As advocated by Ilmarinen (2012), proactive and preventive pension reform could consider the substantial individual differences between LCT by offering a flexible range of retirement dates, with a financial bonus for those who wish to work longer.

In practical terms, principals and educational advisors could set up individual or collective discussions to identify thorny issues specific to LCT, and to reflect on and develop specific resources and strategies to cope with them. Identifying these contextual specificities will also allow better monitoring by the school management to facilitate an age-appropriate work experience for all generations within schools. Individually, LCT could also adopt a self-diagnostic approach towards the resources they possess and the strategies they apply to manage work constraints. This would allow them to develop awareness and to focus specifically on resources that are diminishing or absent, or resources that are essential in order to thrive in the profession. A better understanding of these teachers and their working

life calls for a more personalised support and a smooth path to retirement, to ensure that all teachers, late-career teachers in particular, remain motivated in their careers in a healthy and sustainable way. This is even more important after the COVID-19 pandemic, with its major impact on physical and psychological well-being (Kwon et al., 2022).

6. Conclusion

The findings of this study revealed that there are four distinct profiles of LCT in early childhood education, based on their personal resources: occupational future time perspective; resilience; selection, optimisation, and compensation strategies, and self-efficacy for learning and development. Furthermore, these personal resources profiles were found to have a significant moderating role in the relationship between job demands and engagement in professional learning activities.

The study represents an important step towards recognizing the significance of investigating the late-career phase and the context-specific demands and resources present in the teaching profession. It also highlights the potential for teachers to enhance their own career development by strengthening their personal resources, which can be mobilised to help them thrive throughout their career. Further research on LCT is crucial in order to comprehend the challenges and opportunities faced by these professionals, as they possess valuable knowledge and experience. Their career trajectories can provide valuable insights into effective resource management strategies, career planning and job satisfaction. Moreover, this research has the potential to contribute to the improvement of teaching policies and practices by offering a better understanding of the needs of LCT and by providing recommendations for supporting their well-being and engagement.

Chapter 5

Experiencing the later years: through the lens of LCT' personal resources

The late-career phase of early childhood teachers represents a pivotal yet often overlooked stage in professional development. This study adopts a phenomenological lens to explore how these educators draw on personal resources to navigate professional challenges. Building on previous research identifying four teacher profiles, it examines how each profile responds to job-related constraints. Through two-step in-depth interviews, the study investigates participants' strategies, resilience mechanisms, and engagement in professional learning. Results reveal significant variation in resource mobilisation and adaptive behaviours: poorly equipped teachers rely on routine and avoid change; neutral teachers engage minimally and pragmatically; resilient teachers adopt proactive, collaborative strategies; and well-equipped teachers combine institutional support and innovation to remain actively engaged. These insights highlight the dynamic relationship between personal agency, available resources, and organisational context in shaping career sustainability. The study offers valuable implications for policy and practice, calling for targeted support that empowers late-career educators and recognises their ongoing contribution to early childhood education.

Keywords: Late-career teachers, early childhood education, qualitative research, phenomenology, personal resources, coping strategies

Reference

Brouhier, Q., Raemdonck, I., & März, V. (to be submitted). *Experiencing the late-career phase in early childhood education: A qualitative inquiry through the lens of teachers' personal resources.*

Experiencing the later years

1. Introduction

Teachers in early childhood education (ECE) face some of the most challenging working conditions within the educational landscape. Numerous studies have documented the persistent issues faced by this workforce, including low compensation, high job demands, limited professional resources, and suboptimal physical environments (Kwon et al., 2021; Schaack et al., 2020; Whitebook et al., 2014, 2016). Their daily responsibilities often involve physically strenuous tasks, such as lifting children and working in ergonomically challenging spaces (Randall et al., 2023), which contribute to chronic fatigue, emotional exhaustion, and burnout (Cau-Bareille, 2014; Inbar & Shiri, 2021). These difficult working conditions are closely linked to poor teacher well-being and high turnover rates, with direct consequences for classroom quality and children's developmental outcomes (Grant et al., 2019; Kwon, 2019).

Despite these challenges, and the critical societal importance of their work, ECE teachers have received comparatively little attention in educational research and policymaking (Kwon et al., 2020). This lack of visibility is particularly concerning for late-career teachers (LCT), who represent a group at the intersection of systemic occupational constraints and age-related changes in personal resources (Holman & Walker, 2021; Kanfer & Ackerman, 2004). Retaining these teachers is both essential for maintaining continuity and expertise within schools, yet it is increasingly difficult due to rising demands and inadequate support (Admiraal et al., 2019). Recent research by Brouhier et al., (2023) offers new insights by identifying four distinct profiles based on personal resources among LCT in early childhood education settings. These profiles appear to moderate the relationship between job demands and participation in professional learning. Despite the valuable perspective these profiles offer, the mechanisms through which they operate needs further attention. Similarly drawing on the Job Demands-Resources model (JD-R; Demerouti & Bakker, 2023), the present study seeks to address this gap by investigating qualitatively how LCT draw upon their personal resources to navigate difficult working conditions, and how these resources influence their participation in professional learning activities. The study also seeks to contribute to a more nuanced understanding of what enables late-career ECE teachers not only to remain in the profession, but also to continue learning, adapting, and thriving despite adverse circumstances.

2. Theoretical framework

This section provides a comprehensive explanation of the JD-R model, encompassing the concepts of teachers' job demands, job resources, and personal resources. In addition to the JD-R model, we also explain the COR theory as a theory for explaining how people regulate personal resources throughout the lifespan. along with an overview of professional learning.

2.1 2.1. Job demands-resources and conversation of resources theory

The JD-R model distinguishes between job demands, which require sustained physical, emotional, or cognitive effort, and job resources, which facilitate goal achievement, reduce strain, and foster development (Bakker & Demerouti, 2017). These two categories interact through dual processes: a health impairment pathway, whereby chronic demands lead to strain and burnout, and a motivational pathway, where resources boost engagement and learning even under high pressure. An essential extension of the JD-R model involves the inclusion of personal resources, defined as individuals' beliefs in their ability to influence and manage their environment (Hobfoll et al., 2003). These resources are increasingly recognized as critical drivers of teachers' well-being, motivation, and engagement in professional learning (van der Heijden et al., 2015; Xanthopoulou et al., 2007). They also serve as buffers, mitigating the impact of job demands on burnout and disengagement (Galanakis & Tsitouri, 2022). For LCT, who may face age-related challenges, protecting and deploying these internal resources is particularly important to maintain effective teaching and adapt to evolving professional contexts (Ariza-Montes et al., 2016; Corso-de-Zúñiga et al., 2020).

To further understand how individuals manage their resources across the lifespan, this study also incorporates Conservation of Resources (COR) theory. COR theory posits that individuals are inherently motivated to acquire, retain, and protect valued resources (Hobfoll, 1989, 2002). Stress occurs when these resources are threatened, lost, or insufficiently replenished, especially when the return on invested resources is low (Hobfoll, 2011). Within professional settings, when individuals feel their core resources or values are not supported, motivation tends to decline, increasing the risk of burnout or withdrawal. COR theory complements the JD-R model by offering a developmental perspective on how individuals preserve and mobilize these resources across time and in challenging work environments, particularly in early childhood education. By integrating both perspectives, this study adopts a lifespan-sensitive lens to explore how LCT navigate professional demands, sustain engagement, and regulate personal resources within ECE settings.

2.2 Teachers' personal resources

Prior research defines personal resources as the mental abilities, traits, and behaviours individuals adopt to adapt to their work environment (Bakker & Demerouti, 2017). In educational research, hardiness, the capacity to perceive stressful situations as challenges rather than threats, has long been identified as a foundational personal resource (Corso-de-Zúñiga et al., 2020). Resilience and adaptability are often considered as extensions of this construct, frequently discussed alongside self-efficacy and psychological capital (PsyCap), which recent meta-analyses highlight as especially vital resources (Bottiani et al., 2019; Granziera et al., 2017; Loghman et al., 2025; Samfira & Paloş, 2021). Recent studies also emphasize teachers as active agents of change, highlighting proactive coping strategies like job crafting to manage demands and optimize personal resources (Alonso et al., 2019; Lord et al., 2010; Van Wingerden et al., 2017). PsyCap, a construct including hope, optimism, self-efficacy, and resilience—has been found to shape job perceptions more than serve as a reactive coping mechanism (Grover et al., 2018). Building on prior work, Brouhier et al. (2023) investigated the role of personal resources in shaping LCT' engagement in

professional learning activities within early childhood education. Grounded in psychological capital and lifespan developmental theory, their study focused on four core resources: resilience, self-efficacy for learning and development, selection, optimization, and compensation (SOC) strategies, and occupational future time perspective (OFTP). These constructs reflect individual capacities to manage professional challenges, sustain motivation, and adapt across later career stages.

Adopting a person-centered approach, the authors identified four resource-based profiles. The Neutral Stance Profile (40.4%) displayed average scores across all dimensions and maintained moderate levels of engagement, largely unaffected by job demands. The Poorly Equipped Profile (35%) showed consistently low resource levels and was the only group where increased job demands correlated with reduced engagement, underscoring their heightened vulnerability. The Resilient Profile (14.7%) was characterized by high resilience alongside elevated self-efficacy and OFTP; teachers in this group demonstrated increased engagement in response to rising demands, suggesting a proactive, challenge-focused orientation. The Well-Equipped Profile (10%) reported high scores across all resources, particularly self-efficacy, OFTP, and SOC, and exhibited the strongest overall engagement in professional learning. Crucially, the study demonstrated that these profiles moderate the relationship between job demands and professional learning engagement. These findings highlight the importance of fostering personal resources as a lever to support sustained professional growth among LCT, particularly in high-demand ECE contexts.

2.3 Teachers' professional learning

The JD-R model offers a useful framework for understanding how workplace conditions shape professional learning. While job demands like task complexity can act as motivational drivers (LePine et al., 2005), job resources such as autonomy and support promote continuous development (Evers et al., 2016). Recent research emphasizes the reciprocal nature of this process: employees engaged in active learning or job crafting not only adapt to their work environment but also help shape it (Wrzesniewski & Dutton, 2001; Zhang & Parker, 2019), supporting the idea of a self-reinforcing cycle (De Lange et al., 2010). This perspective aligns closely with Teachers' Professional Learning (TPL), where engagement and contextual factors are central. Engagement is known to foster learning, motivation, and retention (Fredricks et al., 2004; Pekrun & Linnenbrink-Garcia, 2012), particularly when viewed through a "person-in-context" lens (Schmidt et al., 2018). The JD-R model enriches our understanding of how job characteristics influence teachers' learning trajectories, while TPL frameworks highlight how professional growth contributes to teachers' well-being and instructional effectiveness (Jeon et al., 2019; Smith & Lawrence, 2019; Xie et al., 2023).

Teachers' professional learning encompasses a wide range of individual and collaborative learning experiences, including training, reading, reflection, and peer engagement, all essential for improving education quality and retaining skilled teachers (Avalos, 2011; Kwakman, 2003; Taylor et al., 2010). Evers et al. (2016) classified these experiences into five key dimensions: staying updated with new knowledge and practices, experimenting with teaching methods, reflecting and seeking feedback, collaborating with colleagues to improve lessons, and engaging in collective efforts for school-wide development. Traditionally, TPL relied on top-down models, often structured around one-time training sessions led by external experts, based on the assumption that teachers had skill gaps requiring remediation (Clarke

& Hollingsworth, 2002). However, this approach, frequently detached from the school context, has been criticized for its limited effectiveness and relevance to actual teaching practice (Timperley, 2011). Additionally, the increasing influence of performativity and accountability has further restricted teachers' autonomy in their professional growth, reducing its impact on practice (Lloyd & Davis, 2018). In response, contemporary perspectives advocate for professional learning that is embedded in teachers' daily work, evolving dynamically and emerging from identified needs rather than being imposed externally (Opfer & Pedder, 2011; Clarke & Hollingsworth, 2002). While traditional learning occurred in formal, classroom-based environments, the concept of professional learning has broadened to encompass informal learning within the workplace as well (Cheetham & Chivers, 2001; Eraut, 2004). A growing body of research advocates for a more integrated and contextualized approach to TPL, emphasizing the role of informal, situated, and community-driven learning. (Enthoven et al., 2023) propose conceptualizing TPL as a dynamic and interconnected 'learning landscape' rather than a linear process. According to Wenger-Trayner and colleagues (2015), this perspective frames professional learning not as a series of isolated episodes, but as a continuous process shaped by teachers' engagement within and across multiple communities of practice.

2.4 Research questions

This study aims to investigate the various profiles of LCT in early childhood education settings, as delineated by Brouhier et al. (2023). Its objective is to identify the key resources mobilised in challenging work contexts, as well as those that have supported to professional learning. To this end, the study addresses the following four research questions:

RQ1: How do different profiles of LCT manage their personal resources (develop, maintain, prevent losses)?

RQ2: How are personal resources mobilised by different LCT profiles in response to hindering job demands?

RQ3: How differences in LCT profiles impact professional learning and development in ECE?

3. Method

To address these research questions, a qualitative phenomenological approach was identified as the most suitable methodology for this study, given its focus on understanding how individuals interpret and make sense of complex phenomena (Sholokhova et al., 2022), specifically work and learning experiences in late career phase. According to Bartholomew et al. (2021), a phenomenological method with small sample sizes is particularly advantageous for capturing the voice of each participant in depth, which enables us to study in-depth the particularities of each profile. Through two-stage semi-structured interviews, the study explored significant critical incidents in relation to resources and demands, aiming to understand participants' learning experiences during the late-career phase. As experienced teachers, the participants provided rich insights into the phenomenon of the late career phase in early childhood education (ECE) settings.

3.1 Sample description

This study employed purposive sampling to recruit a cohesive group of LCT. Participants met three inclusion criteria: (1) being aged 50 or older, (2) having at least 19 years of teaching experience, and (3) currently working in early childhood education settings. Participant characteristics are detailed in Table 12. To ensure confidentiality, pseudonyms were used throughout the study (Creswell, 2013). The final sample included 24 participants, of whom 23 were female, all working in ECE institutions within one of the three main educational networks of the French Community of Belgium (FWB): the Wallonia-Brussels Education (WBE) official subsidised network, the Provincial official subsidised network, and the Confessional education network. School sizes ranged from approximately 50 to 300 students, with an average workload of 81% of full-time equivalency ($SD = 0.19$). Participants were aged between 50 and 64 years ($M = 56.83$, $SD = 3.85$), and had 27 to 39 years of teaching experience ($M = 32.00$, $SD = 4.56$). They taught children aged 2.5 to 6 years, covering the full ECE age range in the Belgian system.

3.2 Data collection and interview protocol

Participant recruitment followed a multi-step strategy combining open calls and snowball sampling. Initially, a call for participation was disseminated through teacher-focused social media groups and professional networks. This first step yielded several eligible participants, who were then invited to complete a pre-screening questionnaire. Subsequently, a snowball sampling strategy was employed: participants who had completed the first interview were invited to recommend colleagues likely to meet the study criteria (Marshall & Rossman, 2014). All prospective participants, whether reached through open calls or via referrals, were required to complete the same questionnaire to confirm their alignment with one of the four personal resource profiles identified by Brouhier et al. (2023) (see Figure 4). The questionnaire comprised validated scales measuring SOC strategies, Occupational Future Time Perspective (OFTP), resilience, and self-efficacy. These instruments have demonstrated sound psychometric validity. A cover letter outlining the study objectives and a consent form were included to ensure ethical transparency.

Z-scores were computed for each scale, and participants were assigned to a profile based on the original classification framework developed by Brouhier et al. (2023). Interviews were then conducted with a minimum of four participants per profile, continuing until theoretical saturation was reached (Parker & Scott, 2019). When a given profile reached saturation, additional candidates, though eligible, were not included to maintain balance across the sample. This was the case for three individuals.

This process reflects purposive sampling, a qualitative technique aimed at selecting information-rich cases for in-depth exploration (Creswell, 2007; Patton, 2002). Specifically, a homogeneous sampling strategy was used to ensure participants shared relevant characteristics and had direct experience of the phenomenon under study (Etikan et al., 2016; Creswell & Plano Clark, 2011). In line with phenomenological methods, in-depth semi-structured interviews served as the primary data collection tool (Creswell, 2007). Each participant took part in two individual interviews, based on a two-stage protocol adapted from Seidman (2012). Interviews lasted between 50 and 75 minutes and were conducted either in person (at the school or a neutral location) or remotely, depending on participants'

availability. The first interview focused on participants' professional trajectories, including critical incidents and turning points, with particular attention to the development of their professional learning. The second interview, conducted within a one-week timeframe to maintain continuity and minimise attrition, aimed to deepen emerging themes and clarify meanings. While most first interviews (80%) were face-to-face, second interviews were more flexible in format, including in-person, phone, or video calls (Zoom/Teams).

3.3 Data analysis

Data analysis followed a phenomenological approach, centred on developing thematic insights into participants' lived experiences (Creswell & Poth, 2016). Interviews were transcribed verbatim, and each statement was analysed with equal weight (Everhardt, 2009). The first author conducted the initial coding, identifying key quotes and compiling a list of significant expressions, which informed the development of a codebook (Carley-Baxter, 2008). Thematic content analysis was then conducted, supplemented by peer debriefing with co-authors to enhance interpretive rigour (Lichtman, 2023). Key excerpts were grouped into core themes representing essential structures of the participants' lived experience (Yüksel & Yildirim, 2015).

Table 12. Participant demographics and professional characteristics

Pseudonyms	Year	Teaching % Exp	Contract	Class	School type, urban/rural	School size
Lucia	1974	27	100%	K3	K-12 school, capital	Small, 5 classes
Greta	1973	28	100%	K1	K-12 school, capital	Large, 20 classes
Simona	1964	38	50 %	All	K-12 school, urban	Large, 19 classes
Alberta	1964	32	75 %	K2	K-12 school, urban	Large, 19 classes
Camilla	1972	31	100%	K1	K-12 school, urban	Small, 5 classes
Sara	1966	38	75%	K1	Kindergarten, rural	Small, 3 classes
Paola	1964	35	75%	All	Kindergarten, capital	Large, 13 classes
Hannah	1963	39	80%	K1	K-12 school, capital	Large, 14 classes
Lina	1973	30	80%	K1-3	Kindergarten, rural	Small, one class
Nora	1971	27	100%	K2	Kindergarten, capital	Large, 13 classes
Philipp	1969	30	50%	K2	Kindergarten, capital	Large, 14 classes
Nadia	1974	29	100%	K3	Kindergarten, capital	Large, 13 classes
Assunta	1963	37	50%	K2	K-12 school, urban	Large, 19 classes
Marine	1965	37	100%	K3	Kindergarten, rural	Small, 4 classes
Dominique	1970	32	75%	K1	Kindergarten, urban	Medium, 8 classes
Adeline	1970	28	50%	K2-K3	Kindergarten, rural	Small, 3 classes
Fabienne	1965	34	80%	K2-K3	K-12 school, urban	Medium, 7 classes
Laurie	1964	30	50%	K2-K3	Kindergarten, urban	Large, 12 classes
Georgia	1970	36	80%	K3	K-12 school, urban	Medium, 9 classes
Alina	1970	33	100%	K3	Kindergarten, rural	Small, 3 classes
Joana	1968	35	75%	K1	Kindergarten, urban	Medium, 9 classes
Astrid	1963	40	100%	K3	Kindergarten, rural	Small, 3 classes
Noemie	1972	22	100%	K1	Kindergarten, urban	Large, 13 classes
Miriam	1969	34	100%	K3	Kindergarten, urban	Large, 13 classes

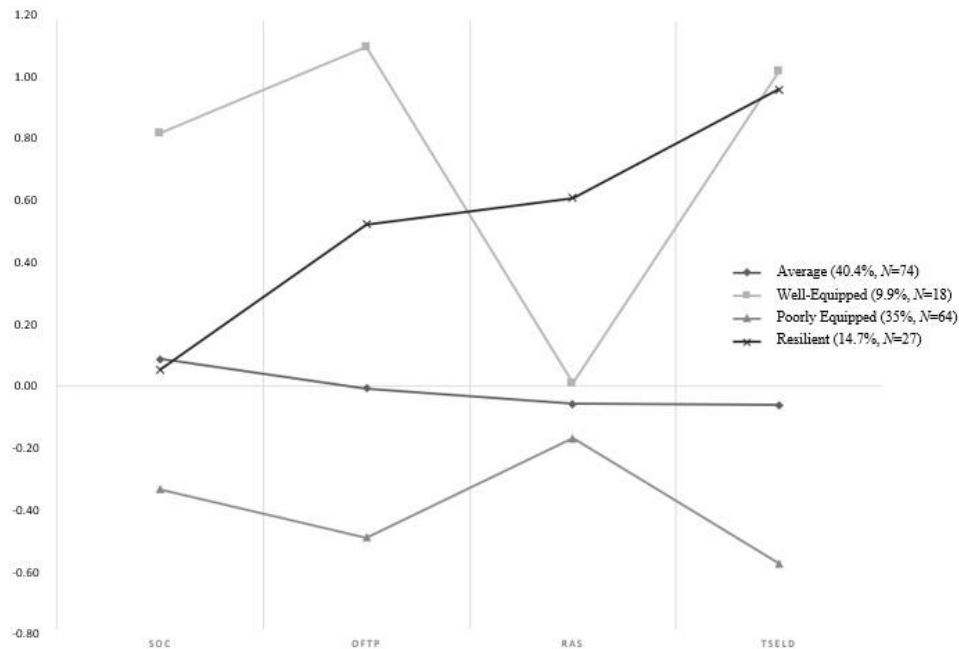


Figure 6. Four profiles of LCT in ECE schools, retrieved from Brouhier et al. (2023)

4. Results

4.1 Survey participants profile: Descriptive data

To allocate participants to a certain profile, two authors used Brouhier and colleagues' (2023) framework to evaluate participants' profiles based on Z-scores for four personal resources, employing a double-blinded process. The criteria were as follows: the "Poorly Equipped" profile exhibited negative Z-scores across all personal resources, while the "Neutral Stance" profile showed Z-scores close to 0. In contrast, the "Resilient" profile had positive Z-scores, with resilience as the highest score. Lastly, the "Well-Equipped" profile showed consistently high positive Z-scores. The demographic characteristics of the participants, including mean age and teaching experience, are summarised in Table 13. A Cohen's kappa was then calculated to ensure a sufficiently high level of inter-rater reliability among the two coders (McHugh, 2012). The calculation of Cohen's kappa yielded the results $\kappa = 0.82$ ($p \leq .001$, $n = 25$), which is considered as almost perfect agreement (Landis & Koch, 1977).

Table 13. Means and standard deviations of participants' profiles

Profiles	Pseudo-nyms	N=24	Resources			
			SOC M(SD)	OFTP M(SD)	Self-efficacy M(SD)	Resilience M(SD)
Poorly equipped	Sara Nadia Assunta Marine Fabienne Georgia Alina	7	3.28 (.82)	2.2 (.53)	3.19(.63)	3.56(.53)
Neutral stance	Greta Simona Camilla Paola Hannah Nora Dominique	7	3.68(.61)	3.03(.63)	3.4(.92)	3.88(.53)
Resilient	Lucia Alberta Philip Adeline Noemie Miriam	6	3.83(.46)	2.77(.50)	3.92(.38)	4.53(.26)
Well-equipped	Lina Laurie Joana Astrid	4	4.25(.61)	2.8(.94)	4.33(.41)	4.1(.81)

4.2 Descriptive overview of LCT profiles

To address the first research question, this section begins with an overview of the descriptive data. It outlines the key characteristics of the identified LCT profiles, offering a broad perspective on their personal resources, job perceptions, and concerns. These insights lay the groundwork for the subsequent qualitative analysis, which examines how these profiles navigate the challenges and learning opportunities encountered in the later stages of their careers.

Poorly equipped profile: A complex balance of passion and exhaustion

LCT with poorly equipped profile are characterized by a deep attachment to the profession, yet they are increasingly challenged by emotional and physical fatigue. Teachers in this profile often remain passionate and engaged, but they also report heightened stress, a loss of recognition, and growing demands that erode their capacity to teach meaningfully. While teachers seek to improve their practices, many feel their role is shifting from pedagogy to discipline and structure. The repetitive nature of the work, limited recovery time, and constant pressure contribute to monotony and accelerated burnout. Teachers in this profile often sacrifice basic needs, such as proper meals or rest, as the pace of work becomes unsustainable. Personal investment in planning varies: some concentrate efforts strategically to preserve energy, while others feel overwhelmed by continuous demands. Administrative

burdens, lack of institutional support, and a system requiring constant adaptation exacerbate this exhaustion. These conditions reveal the limitations of relying solely on individual coping strategies. Maintaining work-life balance also proves difficult. In smaller schools, especially, constant supervision responsibilities leave little room for respite. Increasing delegation and ongoing meetings consume potential recovery time. As their dedication goes unrecognised, frustration replaces the sense of vocation that once sustained them. The physical and psychological toll intensifies with age. Symptoms such as insomnia, chronic fatigue, and menopause-related difficulties complicate daily responsibilities. For those with previous burnout or long commutes, the absence of viable career alternatives reinforces a sense of stagnation. Torn between staying in a profession they still value and lacking realistic exit options, many face the end of their career with growing uncertainty and weariness.

“Slowly, I can feel that I’m approaching the end of my career, not because I no longer love my job, but because it’s becoming harder, heavier, and more stressful. At times, it’s difficult to manage. Age is catching up with me, and, well... the years are starting to show.” (Alina, 55, L350-353)

"The job has changed so much. Children are harder to manage now, there’s this ‘child-as-king’ attitude that didn’t exist before. I feel more like a police officer than a teacher most days. It’s heavier, more stressful, and I get tired faster than I used to. But I still care deeply. I’m usually the first to speak up when something needs to change, it’s just hard to keep pushing when recognition is so scarce." (Georgia, 55, L160-165)

Neutral stance profile: A delicate balance between Adaptation and preservation

For teachers in this profile, the final phase of their careers involves a fragile balance between managing daily demands and preserving their well-being. Neither highly structured nor particularly confident or resilient, they tend to approach their profession cautiously, often conserving energy to remain active until retirement. Promoting student autonomy is one strategy these teachers employ to ease daily pressures and distribute workload more evenly. This measured approach reflects a desire to maintain professional sustainability while avoiding premature exhaustion.

Teachers in this profile often describe career paths shaped by frequent transitions and periods of uncertainty. Experiences such as maternity leave or limited institutional support upon returning to work have fostered a mindset of ongoing adaptation. However, this flexibility is frequently expected without adequate support, particularly in cases of new assignments or structural school changes. Although motivation and enjoyment in teaching persist, a sense of vulnerability remains, especially when professional satisfaction is closely linked to collegial support. The anticipated departure of a trusted colleague, for example, may threaten their engagement and stability in the role.

Ultimately, teachers in this profile navigate their work with caution, aware that their ability to remain in the profession depends on external conditions such as team dynamics, workplace demands, and institutional recognition. Their experience reflects a continuous negotiation between a lasting commitment to teaching and the need to avoid burnout, which shapes much of their professional decision-making in the final stage of their careers.

"Physically, I'm doing fine, but I know I need to pace myself. I've learned to preserve my energy, not push too hard. I try to make the children more autonomous whenever possible, and that helps ease the daily load. It's not about doing less, it's about doing it smarter so I can last until retirement." (Dominique, 55, L230-234)

"Right now, things feel relatively stable. There's still some magic in the day-to-day, it hasn't disappeared. But I worry about the future, especially if my closest colleague leaves. We've built everything together and losing her would feel like losing my balance. I'm not sure how I'd manage without that connection." (Nora, 54, L501-504)

Resilient profile: Teaching as a process of growth, reflection, and sustainable engagement

Teachers in this profile approach the final years of their career with resilience, adaptability, and a predominantly positive outlook. Their professional experience has fostered confidence, reflective practice, and an ability to manage demands without becoming overwhelmed. Over time, they have learned to balance professional expectations with personal well-being.

Sustained curiosity and engagement are key characteristics. Evolving challenges are not viewed as obstacles, but as opportunities for growth. These teachers maintain motivation through structured organisation, boundary-setting, and a mindset that treats each teaching level as a new challenge. Collegial support, kindness, and professional harmony are also considered essential to their job satisfaction. A strong sense of justice shapes how they manage classrooms, reinforcing their professional identity. Maintaining a healthy work-life balance is equally important. By setting clear boundaries and avoiding overinvestment, they preserve their energy and engagement over time.

Although the physical demands of teaching are increasingly felt, these LCT rely on their mental resilience to adapt. Rather than pushing through exhaustion, they adjust their involvement strategically to avoid burnout. Toward the end of their careers, broader reflections emerge—on the purpose of education and its alignment with personal values. Some express concerns about the evolving direction of the school system, while others begin to prepare for retirement gradually, opting for professional leave to ease the transition. For these teachers, the final career stage is seen not as a decline but as a meaningful evolution, grounded in resilience, clarity, and purpose.

"It's hard to put into words... What gives me energy is having colleagues I get along with, and that has only grown. The past three years have been wonderful in terms of school climate. These connections are getting stronger all the time. We see each other, go out, send messages, it's become more than just work. They've become real friends." (Noemie, 53, L280-285)

" Physically, I feel the years, but mentally, I'm still strong. I've chosen to step back a little, not out of disengagement, but to make space for what comes next. I'm planning a professional leave to reflect, recharge, and prepare for the transition. I'm also thinking more about the kind of values I want to carry forward. The system is evolving, and while I don't always agree with everything, this period is helping me reconnect with what truly matters, to me, and to the kind of educator I want to remain until the end." (Alberta, 60, L287-294)

Well-Equipped Profile: Confidence, Balance, and Fulfilment in Late-Career Teaching

Teachers in this profile experience the final years of their careers with confidence, fulfilment, and a deep sense of stability. Equipped with strong personal and professional resources, they perceive this phase not as a challenge, but as a rewarding continuation of a well-managed career. Positive feedback from parents reinforces their teaching choices and strengthens their sense of purpose. These LCT evaluate their personal resources positively, particularly their ability to manage demands and maintain professional equilibrium. In contrast to those who experience tension between work and personal life, they report a complementary relationship between both spheres. This balance enables sustained engagement at work while protecting well-being beyond the classroom.

Their teaching practice is marked by mastery and calm. Years of experience have shaped efficient, confident methods, reducing stress and fostering enjoyment. Their well-being is supported by a favourable combination of internal capacities, such as self-efficacy and time management—and external conditions, including supportive school environments and manageable workloads. This alignment allows them to approach the transition to retirement not with fatigue or uncertainty, but with clarity and serenity. Their trajectory reflects the interaction of personal strengths and contextual support, resulting in a phase of professional life that is both harmonious and gratifying.

"When parents tell me how much their children have grown, it really confirms that I'm doing things right. I don't feel limited physically, and I've built enough confidence in my teaching to face the coming years calmly. I feel steady, grounded, it's a reassuring place to be in my career." (Lina, 52, L352-356)

"I feel that everything flows well between my professional life and my personal life. They support each other rather than compete. I know how to manage my time and my energy, and that helps me stay fully engaged at school without feeling drained at home. That balance is what makes it so fulfilling." (Joana, 57, L225-229)

4.3 Navigating job demands: How JD-R pathways shape personal resources mobilisation and engagement in learning activities

Late-career teachers face a constellation of professional constraints that challenge their well-being, motivation, and capacity to remain engaged in their work. Across profiles, four categories of hindering job demand emerged as particularly salient: physical strain, relational tensions (particularly with colleagues or school leaders), pedagogical challenges involving students with special or behavioural needs, and institutional constraints such as policy shifts and increasing administrative tasks. These demands represent core stressors that shape how teachers experience and adapt to their work environment.

Drawing on the JD-R model, this section examines how LCT navigate these challenges through two distinct processes: the health impairment pathway, in which chronic demands lead to strain, disengagement, and withdrawal, and the motivational pathway, in which personal and job resources foster resilience, learning, and sustained engagement. Central to this analysis is the role of personal resources in enabling teachers to either buffer the impact of demands or, conversely, to succumb to energy depletion.

In addition to mapping how different JD-R dynamics operate across teacher profiles, this section explores their consequences for engagement in professional learning activities. Whether teachers invest in learning, withdraw from it, or adopt pragmatic, low commitment approaches often reflects the extent to which they are able, or unable, to mobilise resources under pressure. By comparing the mobilisation patterns and learning behaviours of four distinct LCT profiles, the following analysis offers insights into how professional learning is sustained or eroded in the face of late-career demands.

4.3.1 The poorly equipped profile: Strain, withdrawal, and minimal engagement

The professional trajectory of poorly equipped LCT closely aligns with the health impairment pathway described in the JD-R model. These educators operate in high-demand environments without sufficient personal or contextual resources to buffer stress or reframe challenges as opportunities for growth. Across the board, they report significant physical demands, repetitive movements such as kneeling, lifting, or bending, which are aggravated by age-related fatigue and limited recovery time. Noise exposure in crowded and overstimulating classrooms contributes to cognitive overload, while organisational instability, top-down mandates, and the marginalisation of preschool education fuel a sense of professional neglect. Teachers in this profile often resort to avoidance strategies, such as physically distancing themselves from communal areas, selectively taking on less demanding roles, or extending periods of absence in response to institutional changes or conflict. Coping behaviours, while pragmatic, tend to be reactive and short-term: folding chairs to alleviate physical strain, minimal curriculum adaptation, or reliance on older students to reduce direct intervention. Their limited job resources are compounded by low self-efficacy, diminished resilience, and the absence of consistent collegial or leadership support.

This orientation is reflected in their minimal engagement with professional learning. Development is deprioritised in favour of immediate classroom survival. Teachers like Marine and Georgia describe routines centred on conserving energy—reusing older teaching materials, limiting preparation to weekends, and disengaging from recent curricular reforms. Formal training is rarely pursued and often perceived as time-consuming or irrelevant. Learning is approached not as an opportunity for renewal but as an additional demand to be avoided. In JD-R terms, this profile exemplifies a reactive survival mode, where sustained exposure to job demands depletes emotional and physical reserves, leaving the motivational process inactive. While these teachers often retain strong affective ties to their students and a deep attachment to their profession, the absence of resources, both personal and systemic, prevents re-engagement or innovation. Without tailored support systems, targeted learning opportunities, or institutional recognition, their professional pathway risks stagnation, emotional disengagement, and premature attrition.

"At this stage, I don't reinvent everything anymore. I've accumulated so many materials over the years, I just reorganise what I already have. On Sundays, I take a couple of hours to set up the basics for the week, but I don't go beyond that. There's simply no time or energy left for adapting to every new reform. They change things so often, but in the end, I stick to what works for me and my class. It's not that I don't care, it's just that I have to be realistic. I need to make it to the end without burning out." (Marine, 61, L215-221):

"I still feel competent in the classroom, I know how to manage, how to engage the kids, but the pace of the year wears me out faster than it used to. I've thought about reducing my hours, but it's not easy to bring up with the principal. You learn to navigate the system... I even plan my sick leave carefully, just enough days so someone can cover, because I can't leave my colleagues in a bind. There's always this tension, do I take care of myself, or do I hold on a bit longer for the team?" (Sara, 53, L347-353):

4.3.2 The neutral stance profile: Strategic balance and professional conservation

LCT in the Neutral Stance profile reflect a position of cautious equilibrium within the JD-R model. These teachers do not experience the high levels of exhaustion characteristic of the poorly equipped profile, nor do they demonstrate the proactive engagement seen in the group of resilient or well-equipped teachers. Instead, their professional experience is defined by careful negotiation—an effort to preserve their energy and maintain functionality in the face of ongoing demands. Physical strain is managed through basic adaptations, such as using child-sized chairs or fostering student autonomy to reduce repetitive effort. Teachers like Dominique and Nora employ similar strategies when addressing workplace tensions, relying on emotional regulation and collegial cooperation to avoid burnout. While not disengaged, they are deeply attuned to maintaining balance. Changes in their professional environment, such as the departure of a key colleague, can feel destabilising, revealing the importance of social continuity for their professional well-being.

When navigating organisational demands, these teachers favour minimal compliance over full implementation. They do not reject institutional reforms outright but selectively integrate aspects they find relevant or practical. Curricular adaptations are filtered through a pragmatic lens, ensuring that changes do not overburden their routines or compromise their autonomy. This approach extends to professional learning: engagement is limited, largely informal, and focused on low-investment strategies. Teachers like Greta and Dominique consult pedagogical literature, online resources, or peer suggestions to update their practices selectively. Formal training is rarely prioritised unless it directly aligns with immediate classroom needs. From a JD-R perspective, this profile represents a middle ground, resource levels are adequate to avoid the health impairment process but insufficient to trigger sustained engagement or transformation. These LCT maintain professional continuity through careful resource allocation, but without external encouragement or tailored support, their capacity for innovation remains underutilised. Ultimately, the Neutral Stance profile illustrates a model of strategic preservation. Teachers in this group succeed in maintaining their professional role, but their cautious posture may limit opportunities for renewal, suggesting the need for supportive environments that foster low-risk experimentation and deeper engagement in learning activities.

"I've learned not to get too emotionally involved. If there's tension, I try to keep things calm and professional, there's no point in making things worse. I get along well with my team, and that helps a lot. But I won't lie, just thinking about my colleague retiring next year makes me anxious. We've built a rhythm together, and losing that kind of support changes everything. It's not just about teaching, it's about who you teach alongside." (Dominique, 55, L320-327)

"I keep an eye out for new ideas, sure, but it has to be manageable. I'll read an article, browse a few blogs, maybe chat with a colleague who tried something interesting. But long trainings? Not unless it really fits what I'm doing in class. I know what works for me and my students, and I don't want to change everything just because the curriculum shifts again. I adapt when it makes sense, not just for the sake of it." (Greta, 52, L198-203):

4.3.3 The resilient profile: Adaptive engagement and sustained growth

The Resilient profile exemplifies the activation of the motivational pathway in the JD-R model. LCT in this group combine well-developed personal resources with a strong sense of professional purpose. Rather than withdrawing in the face of job demands, they channel their energy into thoughtful, proactive strategies that support sustained engagement. Physical strain is a reality for many, some experience chronic back issues or fatigue, but they adjust workloads and manage emotional investment to preserve both energy and meaning. Alberta, for example, describes her transition to retirement as a conscious, paced process that protects her psychological resources while preparing for professional closure. Classroom complexity and noise are addressed through deliberate environmental and pedagogical strategies. These teachers use sound-dampening tools, organise activities to reduce overstimulation, and instil calmness in their pupils through example. Delegation and student involvement in class routines are also common, reflecting their belief in shared responsibility and in cultivating autonomy.

Professional learning is a cornerstone of this profile. Engagement is active, personalised, and often interdisciplinary. Teachers like Adeline pursue targeted training aligned with their values, such as inclusive education or applied neuroscience. Noemie embodies a curiosity-driven model, combining formal workshops, peer dialogue, and cross-disciplinary exploration. Their learning paths are strategic and meaningful, often extending beyond institutional requirements to support long-term instructional goals. Even those less aligned with formal training, like Miriam, find alternatives. She avoids competitive settings in favour of self-guided inquiry, supported by online collaboration and information sharing with colleagues within her school. This diversity of engagement underscores a key trait of the resilient profile: learning is viewed as essential to growth, not as a burden. Whether through reducing teaching hours, mentoring peers, or participating in school innovation, resilient teachers display a dynamic approach to professional sustainability. They protect their boundaries while remaining deeply connected to their vocation. In sum, this profile demonstrates how high personal resources and adaptive strategies not only buffer strain but also support continued development and pedagogical relevance. For these teachers, late career is not a decline, but a period of meaningful evolution and purposeful engagement.

"I still love teaching, but I'm also aware that I'm shifting, slowly. I've reduced my time in the classroom to make room for training that really matters to me. Lately, I've felt a gap between what I can offer and what the children actually need, especially those with learning difficulties. So I'm acting on it, I'm training, I'm learning. Maybe one day I'll leave the classroom entirely, but it'll be by choice, and through a path I've built. I'm not closing doors, I'm opening new ones, at my pace, and with purpose." (Adeline, 54, L400-406)

"What keeps me going is the challenge, there's always something new to explore. I feel aligned with where the profession is heading, especially when it comes to fostering autonomy. I know I'm effective, and I know how to adapt. Whether it's through training, sharing with colleagues, or experimenting across disciplines, I'm always building on what I know. I see learning everywhere. Play, for example, it's not just fun; it's how we remove barriers and let real learning happen. That's what drives me." (Noemie, 53, L675-681):

"I'm always enrolled in something, whether it's a webinar on classroom management, a short course on child psychology, or a first-aid refresher. I love connecting the dots between theory and practice. When something clicks, I often summarise it for my colleagues or suggest a project we could try together. It keeps me going. I need that constant flow of new ideas, it fuels my teaching and gives me the sense that I'm evolving, not just repeating the same routines." (Noemie, 53, L236-242):

"With age, I've found a kind of calm. When problems come up, I don't panic, I talk it through. I ask for advice, whether it's from my children or the school leadership. It helps me see things clearly and make the right decisions. I want to stay full-time right to the end, but I also want those last years to be joyful. I imagine a big celebration when I retire... and in the meantime, I plan to keep playing, laughing, creating with the kids. That's what keeps me going." (Philipp, 56, L415-421)

4.3.4 Well-equipped profile: Mastery, balance, and high-level engagement

The Well-Equipped profile exemplifies the optimal activation of the motivational pathway described by the JD-R model. These LCT display high levels of personal resources combined with favourable institutional and working conditions. As a result, they approach the final stage of their careers not with decline or detachment, but with clarity, confidence, and sustained professional engagement. Physically, they adopt proactive strategies to reduce strain and preserve their capacity to teach. Teachers such as Joana and Lina delegate physically demanding tasks to support staff, avoid assignments that could reactivate old injuries, and pursue preventative practices such as physiotherapy, regular exercise, or relaxation therapies. In the classroom, they anticipate rather than react: routines are implemented early to promote student autonomy, reduce disruptions, and maintain calm environments. Noise is addressed through both environmental and pedagogical strategies, with students being taught how to regulate their own voice and movement, reinforcing a calm and structured climate. In their interpersonal relationships, these teachers apply emotional self-regulation and professional ethics to navigate conflict. Whether through diplomatic engagement or strategic withdrawal, they prioritise harmony and avoid investing in tensions that might compromise their well-being or classroom focus.

Most notably, well-equipped teachers demonstrate high and sustained engagement in professional learning activities. Teachers like Joana and Laurie purposefully align their learning paths with their pedagogical vision, investing in creative domains such as music or movement or adopting digital tools that streamline planning and inspire instructional innovation. Their professional development is not only continuous but also deeply integrated

into their daily practice. They often lead initiatives, support school-wide projects, or contribute to curriculum refinement, reinforcing their role as active contributors within their institutions. Learning is not seen as an additional burden, but as a means of remaining pedagogically current and professionally fulfilled. Their example illustrates how strong personal resources, when supported by a positive work environment, not only mitigate job demands but also act as catalysts for growth, leadership, and innovation. In sum, the Well-Equipped profile represents a harmonious and empowered conclusion to a teaching career, one defined by mastery, balance, and ongoing impact.

"I focus the first two months on setting up clear routines, it's a kind of conditioning, really. Once the rules are in place and the group knows how things work, everything flows more easily. That way, I can free up time to really teach. I like to bring in music and dance; it gives me energy and the children love it. I rotate the materials regularly, so they stay challenged. While most of them work independently, I can really focus on supporting the ones who need more help. It's all about structure, rhythm, and giving space to every child." (Joana, 57, L364-370)

"I changed classrooms mainly to simplify the admin side of things. With this group, the activities flow naturally, and my lesson plans rarely go beyond a couple of pages. I've also invested in materials and use a digital planner that helps me organise everything, from prep to tracking student progress. It's made a real difference. I spend less time on paperwork and more on refining what actually happens in class. That's where I still find real joy." (Laurie, 60, 204-210)

4.3.5 Beyond individual resources: The role of leadership in supporting professional learning

While the preceding typology highlights how personal resources shape LCT' engagement in learning, the interviews also reveal that professional development is not solely an individual matter. The leadership practices of school principals play a decisive role in either fostering or constraining teachers' access to meaningful learning opportunities. Several participants reported that their willingness to engage in training was directly influenced by how their school leadership prioritised, or neglected, professional learning. In less supportive environments, logistical constraints, such as classroom coverage issues, were often cited as reasons to discourage participation in external training, thereby creating a climate of hesitation or disengagement.

In contrast, teachers working in schools with strong instructional leadership described a markedly different experience. In these settings, principals actively encouraged lifelong learning, facilitated access to training, and acknowledged professional growth as a shared institutional goal. This alignment between individual motivation and organisational support proved to be a powerful enabler of sustained engagement in learning activities. These findings suggest that beyond resource mobilisation at the individual level, professional learning engagement is also the outcome of structural and cultural conditions, conditions that school leaders are uniquely positioned to influence.

"In the past, the message from leadership wasn't openly discouraging, but there was always this pressure. You'd hear things like, 'Well, if you go for training, who's going to take your class? How are we going to manage that?'" So even if they didn't say no

outright, it made you think twice before signing up for anything. It created a kind of quiet barrier." (Noemie, 53, L435-439)

"Our principal really keeps track of our development. She'll come to us and say, 'Hey, you haven't done any training this year, don't forget it's important. It's been four or five years since your last one, right?' It's motivating, honestly. You feel like someone's paying attention and encouraging you to keep growing." (Assunta, 52, L364-368)

5. Discussion

The findings underscore the complexity of the final stage of a teaching career, which is shaped by a dynamic interplay of multiple factors, including personal vulnerabilities from the private sphere and contextual workplace conditions. These elements collectively exert a significant influence on teachers' experiences during this career phase. This multidimensional perspective is reinforced by existing research, particularly the review of teachers' career development models conducted by Raduan and Ma (2020). Their study contrasts linear career development models, which conceptualize career progression as a structured sequence of horizontal stages, with non-linear models, which view career trajectories as cyclical. Linear models often portray this final stage negatively, associating it with declining job satisfaction and increased conservatism or disengagement (see Huberman, 1989; Sikes et al., 1985). However, our findings challenge this characterization, as many participants reported remaining at their physical and intellectual peak well beyond 20 years of teaching experience, regardless of their initial career standing or level of professional distinction. This perspective aligns with Day and Gu's (2006) linear model, which identifies two key dimensions, managing work-life tensions and adapting to change, that are frequently echoed in participants' testimonies. Furthermore, Antoniou, Kyriakides, and Creemers' (2015) model, which emphasizes achieving quality and differentiation in teaching using different approaches, closely aligns with the characteristics of resilient and well-equipped teachers. In contrast, teachers identified as low-equipped exhibit traits corresponding to the dimensions outlined by Kessler and Christensen (1992), such as career stability, career frustration, and career wind-down in the later stages of their professional trajectory. These findings highlight the diverse experiences within this career phase and suggest the need for more nuanced frameworks that recognize both the challenges and potential for professional growth during the final stages of a teaching career.

Moreover, findings suggest that not all teachers effectively recognise and utilise contextual resources, such as support from colleagues or school leadership, to foster a positive perception of their profession and teaching practice, particularly the low-equipped profile. This observation aligns with the findings of Brouhier et al. (2023), who reported that teachers with fewer professional resources are particularly vulnerable to experiencing workplace constraints more acutely. Similarly, a study by Van der Want et al. (2018) examining 20 mid- and late-career teachers from eight secondary schools identified three major concerns that correspond with our findings: teacher-parent interactions, the balance between instructional responsibilities and administrative tasks, and the challenge of maintaining a work-life balance. Despite these ongoing challenges, teachers rarely articulate their difficulties openly; instead, they often attempt to resolve issues independently or passively endure unfavourable conditions. This tendency underscores the pressing need for institutional interventions that

encourage professional dialogue, reinforce support networks, and establish more sustainable working conditions to enhance teachers' well-being and job satisfaction. Research by Stang-Rabrig et al. (2022) further highlights the importance of collegial support, particularly in crisis situations such as the COVID-19 pandemic, when teachers encountered heightened and multifaceted challenges. In such contexts, support from colleagues was strongly associated with increased job satisfaction and lower levels of stress and exhaustion, reinforcing the need for structured support systems within educational environments.

Another significant finding indicates that most teachers identify physical constraints as the most influential factor affecting their well-being and professional practice. However, they do not propose concrete solutions to mitigate these challenges. Recent studies highlight that early childhood education (ECE) teachers frequently engage in physically demanding activities, such as bending, stooping, squatting to lift and carry children, and sitting on the floor or in child-sized furniture, all of which require substantial physical fitness (Randall et al., 2022). These physically intensive tasks contribute to a range of health and occupational concerns, which may hinder teachers' ability to fulfil the dual demands of teaching and caregiving effectively. Furthermore, research has demonstrated that teachers experience disproportionately high rates of musculoskeletal injuries compared to other occupational groups (Chong & Chan, 2010; Erick & Smith, 2011). These injuries account for one-third of all work-related health issues among teachers across various educational settings (Chiasson et al., 2012). Within the ECE workforce, in particular, limited access to resources and institutional support exacerbates these health risks. This group has been widely recognized as marginalized, facing not only a high prevalence of musculoskeletal disorders but also increased psychological distress and other health challenges (Kwon et al., 2020, 2021).

Despite these adversities, the physical demands of ECE teaching remain pivotal to sustaining career longevity. However, the combined impact of unfavourable working conditions, along with multiple health and psychological stressors, significantly contributes to musculoskeletal pain and poor cardiorespiratory fitness among ECE teachers (Randall et al., 2023). Given the substantial physical demands and associated health risks within the profession, addressing these ergonomic challenges is imperative. Implementing targeted interventions to promote better postural practices among teachers during their daily activities is of immediate importance. Additionally, comprehensive policy reforms are essential to improving workplace conditions and reducing the prevalence of work-related injuries. This can be achieved through the establishment of risk prevention programs specifically tailored to the physical demands of ECE teaching. Furthermore, the promotion of sustained physical activity initiatives throughout teachers' careers could serve as a preventive strategy to enhance their overall health and well-being, ultimately ensuring their long-term professional sustainability.

Finally, certain symptoms mentioned during the interviews, such as persistent fatigue, migraines, and mood changes, suggest that menopause may be an underlying factor influencing some teachers' professional experiences. However, only one participant explicitly addressed this issue, highlighting a phenomenon that remains largely unspoken and difficult to articulate, particularly in contexts where relationships with school principals may be strained, an aspect also reflected in some participants' testimonies. This qualitative observation aligns with broader research findings. Du et al. (2020) found that as women approach menopause, the majority experience at least one menopausal symptom. Despite this prevalence, only 10% seek medical care, suggesting a significant gap in support and

awareness. Similarly, findings from the Study of Women Across the Nation (SWAN, 2023) in the United States indicate that most participants choose not to disclose their symptoms to their employers, further underscoring the silence surrounding menopause in professional settings. Furthermore, although cross-sectional in nature, the study by Matsuura and Yasui (2025) identified significant correlations between menopausal, psychological, and somatic symptoms and job stress, with fatigue, irritability, nervousness, difficulties in concentration, and headaches being the most reported symptoms. Their findings also indicate that higher levels of perceived support from supervisors and colleagues, as well as greater job satisfaction, are associated with reduced severity of psychological and somatic symptoms. As the education sector strives to foster an inclusive and supportive work environment, and given that most of the teaching workforce is female, the transitional stages of perimenopause, menopause, and post-menopause must be openly addressed (Gebretatayos et al., 2020). These phases can bring significant physiological changes, including alterations in bone density leading to premature osteoporosis, as well as changes in cardiovascular health, body composition, and physical function (National Institute on Aging, 2022). Given these findings, fostering a work environment that actively acknowledges and accommodates the challenges associated with menopause is crucial for ensuring the well-being and retention of female teachers.

6. Limits and future research

A key limitation of this study concerns the saturation of participant profiles, as each category was represented by a small number of individuals. To strengthen analytical depth and broaden understanding, future studies could adopt a profile-specific design, incorporating 10 to 15 participants per profile. This would support theoretical saturation and allow for a more nuanced exploration of intra-profile variability, thereby enhancing the robustness of findings. Another constraint lies in the study's short time frame, which limited observation of long-term career trajectories. A longitudinal design would offer valuable insights into how teachers transition between career statuses and how pre-existing challenges evolve. Such an approach could identify key turning points influencing engagement, satisfaction, or attrition during the late-career phase.

The predominantly female composition of the sample is another notable limitation. While this reflects the broader gender distribution in preschool education in French-speaking Belgium (FWB, 2024), across Europe (Warin, 2018), and the US (Cole et al., 2019), it also underscores a persistent gender imbalance. Since 2013, Eurostat has reported that in more than eleven European countries, men comprise less than 1% of the preschool teaching workforce (Eurostat, 2018). This trend raises critical questions: Why do so few men enter the field, and why do even fewer remain into late career? Future research should examine male teachers' career intentions, the challenges they face, and their professional aspirations, whether related to teaching, leadership, or other roles. Understanding the structural or cultural barriers to retention may reveal levers for improving gender diversity in the workforce. More broadly, assessing the profession's attractiveness to men at various career stages could inform policies aimed at balancing gender representation, with potential implications for pedagogical practices, role modelling, and the broader perception of teaching.

A final reflection concerns participant engagement. Despite the two-stage interview protocol, very few participants withdrew from the study, suggesting strong interest and commitment

among LCT, a population often underrepresented in educational research (Kwon et al., 2020). This interest highlights both the relevance of the research topic and the potential for further inquiry into teachers' late-career experiences. Recruiting LCT poses methodological challenges, as this group is often overlooked in existing studies. To overcome this, we adopted a multi-pronged recruitment strategy combining network-based, snowball, and social media outreach. Professional Facebook groups and peer referrals proved particularly effective, facilitating access to a diverse and otherwise hard-to-reach population. This approach also fostered familiarity and trust, which likely enhanced participation. Given its success, this method offers a promising model for future research on late-career teachers.

7. Practical implications

Fostering the well-being of late-career teachers requires action on individual, institutional, and systemic levels. At the personal level, teachers may benefit from reflective practices such as journaling and goal setting to assess their journey and sustain motivation. Setting objectives, like innovating in pedagogy or mentoring younger colleague, can enhance fulfilment in the final career stage. Stress management techniques, including end-of-day rituals, breathing exercises, and engaging in extracurricular activities (e.g., gardening, physical exercise), help prevent burnout and support physical health. Planning rest and reflection during breaks can also reduce cumulative fatigue.

To renew motivation and avoid professional stagnation, teachers might initiate creative classroom projects or interdisciplinary collaborations with peers, such as co-teaching or joint reading initiatives. They could explore new pedagogical approaches through professional development in areas like inclusion, neuroscience, or digital tools, or seek diverse teaching environments, including rural or specialised settings. These strategies foster rejuvenation and purpose. Peer interactions also play a crucial role. Participation in discussion groups or teacher communities, online or in-person, provides emotional support and facilitates sharing of best practices. Informal mentoring of early-career teachers can reinforce a sense of purpose and professional contribution. Such efforts promote solidarity, well-being, and sustained engagement.

School leadership is equally essential in supporting late-career teachers. Principals can promote well-being by facilitating open dialogue, offering personalised support, and fostering intergenerational collaboration. Activities such as stress management workshops or social gatherings contribute to a positive school climate. Leadership teams can also pilot well-being initiatives and advocate for institutional change by communicating teachers' needs to educational authorities. From a policy perspective, the current crisis in teacher retention, particularly in early childhood education, demands renewed attention to continuing education and career development. Professional training should go beyond pedagogy to include emotional resilience, stress management, and work-life balance. Dedicated spaces for collective reflection could help co-construct solutions adapted to late-career needs. Moreover, offering revitalisation opportunities, such as observation stays or time for innovation, can re-energise teachers.

Finally, professional trajectories must be diversified and revitalised. Opportunities for innovation, observation stays, or voluntary reconversion into related fields (e.g., educational project coordination, cultural mediation) can offer rewarding alternatives. Transitional

positions in external institutions or hybrid roles, combining teaching, mentoring, and research, may provide LCT with flexibility and renewed purpose. Investing in the final phase of teachers' careers not only prevents burnout but also leverages their expertise, ensuring a sustainable, inclusive, and motivated workforce for future generations.

Chapter 6

Trained to thrive: Strengthening personal resources of LCT

The teaching profession faces increasing demands, leading to stress and burnout, particularly among LCT in Early Childhood Education. This study involved the design and implementation of a three-day training intervention in French-speaking Belgium to strengthen LCT' personal resources, resilience, self-efficacy, SOC strategies, and occupational future time perspective, enhancing their work engagement and wellbeing. Findings showed sustained improvements in personal resources and work engagement, with significant wellbeing gains over time. These results underscore the importance of tailored professional development programs in helping LCT manage job pressures effectively and maintain their commitment to the profession.

Keywords: Late-career teachers, intervention study, personal resources, work engagement, well-being, early childhood education

Reference

Brouhier, Q., Raemdonck, I., & März, V. (to be submitted). *Trained to Thrive: Strengthening Personal Resources of Late-Career Early Childhood Education Teachers.*

Trained to thrive

1. Introduction

In an era of rapid educational, technological, and societal change, teaching has become an increasingly complex and emotionally demanding profession (Saloviita & Pakarinen, 2021). Teachers must not only uphold high academic standards but also continuously adapt to evolving curricula, meet the diverse needs of students, and respond to growing societal expectations, all of which contribute to heightened occupational stress (Desrumaux et al., 2015; Ortan et al., 2021). Such persistent demands place significant strain on teachers' cognitive, emotional, and organisational capacities, thereby elevating their risk of experiencing psychological distress, burnout, and disengagement over time (Shumbera et al., 2025). Evidence shows that these pressures have a substantial impact on teacher well-being, which in turn negatively affects job satisfaction, professional efficacy, and long-term career commitment (Albulescu et al., 2018; Arnup & Bowles, 2016). While overall well-being has shown some improvement since the onset of the COVID-19 pandemic, teachers still report poorer mental health outcomes compared to the general working population (Doan et al., 2023; Steiner et al., 2022). Poor well-being among teachers has been linked to absenteeism, diminished job performance, and increased rates of attrition (Harding et al., 2019; Stansfeld et al., 2011), further contributing to the broader societal problem of teacher shortages. In the early childhood education (ECE) sector, these issues are even more pronounced. Due to low wages, limited societal recognition, and intensified workloads, ECE teachers, especially those in the later stages of their careers, are particularly vulnerable to emotional exhaustion and physical strain (Thorpe et al., 2020; Creagh et al., 2023; Brophy-Herb, 2023).

As systemic demands intensify, late-career teachers (LCT) emerge as a population particularly susceptible to cumulative professional, cognitive, and physical strains. Age-related declines in executive functions (Idowu & Szameitat, 2023) and reduced levels of physical activity (Cheval et al., 2022) can hinder their capacity to manage the rising demands of the profession. Furthermore, resource loss tends to accelerate with age (Baltes & Lang, 1997; Freund, 2008), making the strengthening of personal resources increasingly critical for sustaining work engagement and well-being. However, despite these recognised challenges, there is a lack of targeted interventions aimed at supporting personal resource development among LCT, particularly within the ECE sector (Jeon et al., 2017; Randall et al., 2023).

In ECE settings, where emotional demands are high and organisational support is often limited (Kwon et al., 2020), sustaining work engagement becomes especially crucial. Work engagement, defined as vigor, dedication, and absorption in one's work (Schaufeli et al., 2002), has been associated with better teaching quality, stronger job performance (Bakker & Bal, 2010). Importantly, engaged teachers are better equipped to cope with job-related stressors (Nislin et al., 2016), potentially mitigating the negative impacts of demanding work environments on both themselves and their students. Yet, research focusing specifically on work engagement within the ECE sector remains limited (Bostic et al., 2023). Well-being is equally central to sustaining teacher effectiveness and workforce stability. Elevated levels of

psychological distress among ECE teachers, including depressive symptoms and job-related stress, have been linked to suboptimal classroom practices and increased turnover (Grant et al., 2019; Kwon, 2020). Given that ECE teachers often face heavier workloads, larger teacher–child ratios, and heightened behavioural challenges (Kwon et al., 2020), supporting their well-being emerges as a priority for ensuring the stability and quality of early education services.

Although these challenges have been clearly identified, interventions specifically designed to reinforce personal resources among LCT in ECE remain scarce (Jeon et al., 2017; Randall et al., 2023). Addressing this gap, the present study aims to examine how strengthening personal resources can contribute to more sustainable work engagement and well-being among late-career ECE teachers. To operationalise this aim, a targeted intervention was developed, building on previously identified resource profiles (Brouhier et al., 2023) and focusing on two interconnected objectives: first, to enhance LCT' personal resources, and second, to promote sustained work engagement and well-being over time. Beyond the design of the intervention itself, the broader goal of the manuscript is to rigorously assess its effectiveness. By testing the intervention's effects, the study seeks to contribute empirical evidence on strategies that support career sustainability for late-career teachers, thereby responding to the growing need for longitudinal and resource-focused approaches in educational research (Guglielmi et al., 2015).

2. Theoretical framework

This article presents a theory-based intervention design to effectively train LCT by strengthening their personal resources. The intervention is grounded in the Job-Demands Resources (JD-R) model, which explains how personal resources contribute to key outcomes like work engagement and well-being. Particularly teachers aged 50 and above are targeted in this intervention. To guide the design of this intervention, the Transtheoretical Model (TTM) of behaviour change is applied, offering a framework for understanding how LCT progress through various stages of cognitive and behavioural changes when transitioning to healthy work behaviour. This allows the intervention to be tailored to specific stages of readiness that LCT may be at, ensuring that the strategies provided are aligned with their current capacity for change and professional development. Both the JD-R and TTM models will be explained in detail in the following paragraphs, outlining their relevance and how they collectively inform the development of an intervention that promotes sustainable change and well-being among LCT.

2.1 The Job demands-resources model

The JD-R model (Bakker & Demerouti, 2023) provides a robust theoretical framework for understanding how work engagement and psychological well-being are shaped by workplace conditions. Central to this model are two key psychological processes. The health impairment process posits that persistently high job demands, such as elevated workload and emotional strain, gradually exhaust employees' mental and physical resources, leading to burnout and diminished well-being (Dicke et al., 2018). In contrast, the motivational process highlights how job resources, such as collegial support, leadership quality, and opportunities for professional development, enhance employees' ability to achieve work goals, thereby

fostering work engagement and psychological well-being (Granziera, 2022; Collie, 2023). Additionally, job resources not only promote engagement directly but can also buffer the negative effects of high job demands on well-being. Thus, individuals are most likely to thrive when they experience a combination of substantial resources and appropriately challenging demands (Bakker, 2011). Given that the principal aim of this study is to enhance work engagement and well-being among late-career early childhood teachers, the focus will primarily be on the motivational process and the mobilisation of personal resources.

2.1.1 Personal resources of teachers

An important extension of the JD-R model is the integration of personal resources, such as resilience, which reflects individuals' perceived ability to exert control and influence over their environment (Hobfoll et al., 2003). Personal resources are not only crucial for sustaining well-being but also serve as a key motivator for participating in professional development activities (van der Heijden et al., 2015). According to Galanakis and Tsitouri (2022), personal resources play a buffering role by mitigating the negative effects of job demands, reducing burnout, and enhancing work engagement, especially by boosting teachers' confidence in their ability to achieve desired outcomes (i.e. teacher self-efficacy). This buffering effect is particularly relevant for LCT, who, facing age-related changes, must actively preserve these resources to mitigate stressors and maintain teaching quality (Ariza-Montes et al., 2016). Research based on the JD-R model (Bakker & Demerouti, 2017) has shown that while work characteristics predict individuals' behaviour, proactive work-related behaviours can also shape these characteristics (Bakker & de Vries, 2021). This reciprocal relationship is captured by the active shaper hypothesis of de Lange et al. (2010), which posits that individuals are active agents in shaping their work environment, rather than passive recipients of external influences. Drawing on life-span developmental theory (Taris et al., 1998), job crafting theory (Wrzesniewski & Dutton, 2001), and Bandura's (1997) concept of reciprocal determinism, this perspective emphasises how individuals can actively influence their work environment through learning and development. By seeking more control over their roles, individuals apply newly acquired skills, take on greater responsibilities, and increase job demands as part of the job enrichment process (Hackman & Oldham, 1976). When tasks become monotonous, this active agency drives both formal and informal workplace learning (Goller & Paloniemi, 2022), in turn motivating individuals to seek new challenges (Gordon et al., 2015).

Extending this view, Brouhier et al. (2023) conceptualised teachers as self-regulating agents of their own development, capable of employing adaptive strategies to navigate their work environments (Lang et al., 2011). Recent studies identified psychological capital, comprising self-efficacy, resilience, hope, and optimism, as vital personal resources (Loghman et al., 2025). Luthans et al. (2015) underscore the benefits of managing psychological capital, noting its influence on well-being through investment, control, and development. However, Grover et al. (2018) argue that while psychological capital shapes job perceptions, it does not function as a direct coping mechanism for workplace stress. This suggests that although psychological capital fosters a positive outlook on work, effectively managing work-related challenges requires additional self-regulation and the strategic use of adaptive behaviours.

Building on this, the present study explores four personal resources: self-efficacy and resilience, core components of psychological capital, along with Occupational Future Time

Perspective (OFTP) and Selection, Optimisation, and Compensation (SOC) strategies. Both OFTP and SOC, rooted in lifespan developmental theory, are particularly effective for older individuals seeking to maintain control over their work environment, thereby sustaining motivation and leveraging personal strengths (Beier et al., 2022). *Resilience*, specifically, refers to teachers' ability to navigate and overcome both professional and personal challenges, ensuring long-term commitment to their careers (Ainsworth & Oldfield, 2019). *Teachers' self-efficacy for learning and development* encompasses teachers' efficacy beliefs, confidence, and capacity to learn and engage in learning and development activities in the workplace (Armstrong-Stassen, 2008). It is a critical predictor of intentions, choices, persistence, and emotional responses during task execution (Bandura, 1997). Specifically, self-efficacy for learning and development, as proposed by Maurer (2001), plays a central role in motivating teachers to engage in professional development (Maurer & Palmer, 1999). *SOC strategies* enable teachers to maintain high performance by prioritising essential tasks, optimising resources, and compensating for diminished capacities. These strategies, particularly relevant for LCT, support goal prioritisation, skill refinement, and the use of alternative methods to maintain performance levels (Baltes, 1997; Philipp & Kunter, 2013). *OFTP* refers to professionals' perceptions of their remaining opportunities and time within their careers (Zacher & Frese, 2009). OFTP influences teachers' career decisions, motivation, and future plans, especially in contexts with limited career advancement opportunities (Eren, 2012). Drawing from Jeon et al. (2017) and on Brouhier et al. (2023), the importance of interventions to strengthen teachers' coping strategies and personal resources through professional development is emphasised. Strengthening personal resources is anticipated to have a significant effect. Consequently, we hypothesise that LCT who received the training will report greater pre- to post-test improvement in personal resources. Therefore, this study aims to enhance these four key personal resources through a tailored training program that supports teachers in refining their regulation strategies, boosting self-efficacy, improving resilience and by opening their perspective towards future occupational time.

2.1.2 Outcomes of the model: Work engagement and well-being

Research consistently indicates that older individuals tend to exhibit higher levels of *work engagement* compared to their younger counterparts (Schaufeli & Bakker, 2004), an observation further supported by a recent literature review (Mori et al., 2024). However, from the perspective of lifespan development psychology, aging can modify the relationship between job demands, job resources, and work engagement (Hoole & Bonnema, 2015). This is due to changes in physical and cognitive abilities as well as shifts in psychological patterns, including alterations in motivation processes. Lifespan development psychology suggests that transformative processes unfold throughout an individual's life, with development encompassing adaptive mechanisms such as acquisition, maintenance, transformation, and attrition (Baltes et al., 1990). Additionally, a diary study by Scheibe et al. (2019) reported that age indirectly influenced work engagement through positive work experiences. As individuals age, their work engagement is shaped not only by available resources but also by the evolving interplay between their physical, cognitive, and psychological capacities. Work engagement is defined as a positive, fulfilling mental state characterised by vigour, dedication, and absorption (Schaufeli et al., 2006). Highly engaged workers exhibit a strong ability to cope with challenges, maintain high energy levels, and invest substantial effort in meeting job demands (Schaufeli & Bakker, 2004). Previous research has shown that those

with high levels of work engagement tend to experience lower turnover intentions, higher performance, and greater organisational commitment (Bakker & Demerouti, 2008). In addition, longitudinal studies have highlighted the significant role that personal resources, particularly self-efficacy, play in boosting work engagement (Dicke et al., 2018). These findings underscore the importance of fostering work engagement as a critical factor in both individual and organisational outcomes. In this line, strengthening personal resources, especially through strategies that help individuals cope with challenging job demands, represents a key opportunity for LCT to positively experience work. It is hypothesised that LCT who received the training will report greater pre- to post-test improvement in work engagement.

Furthermore, another key outcome within the JD-R framework concerns the concept of teacher well-being, which has received increasing attention in recent years. However, the growing body of research has also led to considerable heterogeneity in its definitions, risking a blurred conceptualisation of the construct. Traditionally, teacher well-being has been described as teachers' subjective experience of their quality of life and job satisfaction (Skaalvik & Skaalvik, 2014), encompassing psychological and emotional dimensions such as work-related stress, burnout, self-efficacy, and positive emotions (Kyriacou, 2011). Hall-Kenyon and colleagues (2014) further associate teacher well-being with a sense of professional fulfilment and the meaningfulness of work. More recently, Hascher and colleagues (2021) have proposed a nuanced conceptualisation, defining teacher well-being as the result of a subjective evaluation of professional life that reflects a "positive imbalance", that is, although positive and negative experiences may coexist, the positive dimensions outweigh the negative ones. This perspective recognises that teacher well-being does not imply the absence of difficulties but rather a predominance of positive affect and professional satisfaction (e.g., Bradley et al., 2018). This approach offers a dynamic and realistic understanding of well-being, particularly relevant in high-demand professions such as teaching.

2.2 The transtheoretical model

Critiques of traditional professional learning models, particularly one-size-fits-all approaches, have led to increasing interest in frameworks that support more tailored and sustainable change (Clarke & Hollinsworth, 2002; Guskey, 2003). Research has identified key factors for effective professional growth including self-efficacy, reflective practice, participation in learning communities, extended programme duration, and ongoing feedback (Guskey, 2003). In this context, the application of The Transtheoretical Model (TTM) offers valuable insights by addressing not only behavioural but also cognitive and emotional dimensions of change. Its stage-based design facilitates the development of more personalised interventions, enhancing participant engagement by aligning support with individuals' readiness for change (Meldrum, 2007).

Originally developed in health psychology, TTM has been successfully applied to the field of education, including studies involving teachers (Jin et al., 2013). The model conceptualises behavioural change as a cyclical and dynamic process composed of five key stages: precontemplation, contemplation, preparation, action, and maintenance (Prochaska & Prochaska, 2019). Individuals move through these stages as they become increasingly motivated and capable of adopting new behaviours. Crucially, transitions between stages are

shaped by both internal factors, such as beliefs, attitudes, and emotions, and external influences, including environmental cues and social context (Ciccomascolo & Riebe, 2006; Prochaska et al., 1994). While those in precontemplation may not yet recognise a need for change, individuals in the preparation or action stages actively engage in goal-directed strategies to alter their behaviour. Some adaptations of the model also include stages such as “relapse” or “unawareness” to reflect the iterative and non-linear nature of change (Segan et al., 2006).

TTM also identifies ten Processes of Change (PC), which refer to the strategies individuals use to progress across stages. These are categorised into five cognitive–emotional processes (e.g., consciousness raising, environmental re-evaluation) and five behavioral processes (e.g., self-liberation, helping relationships) (see Table 14 for a detailed overview). As individuals advance through the stages, their reliance on different processes shifts accordingly (Ntoumanis et al., 2018; Romain et al., 2018). For instance, late-career teachers in the early stages may benefit most from reflective and evaluative strategies, whereas those in the action or maintenance stages are more likely to respond to self-regulatory practices such as goal setting and peer support.

Table 14. Stages of the Transtheoretical Model by Prochaska and DiClemente (1982)

TTM Construct	Description
Stages of change	
Precontemplation	Inactive, LCT have no intention to take action in the next 6 months.
Contemplation	Inactive, LCT consider their own resources and identify the demands to cope with. They recognise the problem that arises when professional demands are too high and personal resources are insufficient. They are aware of the underlying mechanisms that cause exhaustion and burnout. LCT recognise the importance of resources and their direct effect on work engagement and engagement in professional learning.
Preparation	LCT take stock of the existing coping strategies, set goals to achieve them, and take small actions
Action	LCT implement a coping strategy but have done so for less than 6 months.
Maintenance	Maintained coping strategies or strengthened resource for longer than a school year.
Relapse	Return from the action or maintenance stages to initial stages in the cycle.
Process of change	
Cognitive Processes of change	
Consciousness raising	Increase knowledge and awareness of the current level of personal resources, the types of coping strategies for dealing with job demands, as well as the energising effect of these resources on work engagement and participation in professional learning activities.
Dramatic relief	Raise awareness of health impairment resulting from an imbalance between resources and demands. Encourage the expression of negative emotions and frustrations.
Environmental re-evaluation	Analyse how engaging in strengthening personal resources positively affects your interpersonal relationships at work.
Self-reevaluation	Recognise the direct positive effect of strengthening personal resources has on work engagement and engagement in professional learning. Examine own capability and willingness to regulate personal resources.

Social liberation	Show different ways to be actively committed to the change and create the necessary social conditions.
Behavioural processes of change	
Counter conditioning	Learn to replace ineffective coping strategies by more effective coping strategies when dealing with hindering job demands.
Helping relationship	Search social support within the school team to facilitate change.
Reinforcement management	Reward yourself for being committed in a change and receive rewards from others for strengthening personal resources.
Self-liberation	Commit to actively engaging in change by embracing new opportunities for growth, strategically planning resource development, and overcoming internal barriers that hinder progress.
Stimulus control	Use of stimulus to maintain personal resources and remove triggers that cause potential losses.

Adapted table from the original version of Marcus and Forsyth (2008) and Jiménez-Zazo et al. (2020)

2.1 Hypothesis

This study applies the JD-R and TTM model to create a tailored training for late-career teachers in ECE setting, designed to strengthen their personal resources and addresses the following hypotheses:

Hypothesis 1. Building on the work of Brouhier and colleagues (2023), we anticipate that strengthening personal resources will have a significant effect. Therefore, we hypothesise that LCT who receive the training will report greater improvement in personal resources from pre- to post-test.

Hypothesis 2. According to recent research by Mori et al. (2024), work engagement increases with age. Moreover, a diary study by Scheibe et al. (2019) reported that age indirectly influenced work engagement through the frequency of positive work experiences. Consequently, strengthening resources aimed at building strategies to positively cope with hindering job demands will offer opportunities to LCT to positively experience work. We hypothesise that LCT who receive the training will report greater improvement in work engagement from pre- to post-test.

Hypothesis 3. In line with research findings that associate personal resources with higher well-being (Castro Silva et al., 2024; Schaufeli & Taris, 2014), we hypothesise that LCT who receive the training will report higher pre- to post-test well-being.

Hypothesis 4. Building on the findings of Brouhier and colleagues (2023), the effect of strengthening personal resources is expected to be sustained over time. Therefore, we hypothesise that LCT who received the training will continue to exhibit greater improvement in personal resources at T3, indicating long-term retention of benefits.

Hypothesis 5. Recent findings by Mori et al. (2024) indicate that work engagement tends to increase with age. In addition, Scheibe et al. (2019) found in a diary study that age influences work engagement indirectly through the frequency of positive work experiences. Building on these insights, we hypothesise that LCT participants who receive the training will exhibit greater improvement in work engagement overtime (T3).

Hypothesis 6. Finally, as Reis and colleagues (2015) showed that the positive effect of personal resources on participants' health also persists over time, we expect that LCT who

received the training will report greater pre-/post-test to follow-up improvement in well-being overtime (T3).

3. Methods

3.1 Participants

The study sample consisted of 73 LCT, including 72 females aged 50 and older, all employed in ECE within the three maor teaching networks in the French Community of Belgium (FWB): the Wallonia-Brussels Education official subsidised network (WBE), Provincial official subsidised network, and the Confessional education network. Participation in the intervention required individuals to register through the platform of the Inter-Teaching Networks Institute of Continuous Education (IFPC), as the training was officially recognised as part of teachers' professional development program. To facilitate participant recruitment, three strategies were employed. First, the training was announced on the IFPC platform. Second, it was promoted through various social networks and groups of French-speaking Belgian teachers. Finally, detailed information about the training was emailed to the majority of ECE schools in the French-speaking region of Belgium, with a request for principals to disseminate the information to their staff members.

3.2 Study design

This study aimed at implementing a training program to strengthen the personal resources of LCT and to evaluate the program's impact on teachers' personal resources, well-being, and work engagement, in line with the JD-R model. A quasi-experimental, non-randomised design was adopted, an approach commonly employed in educational research when random assignment is not always feasible (Ary et al., 2010). The training consists in a three-day training program spread over three months, with each monthly session lasting approximately four hours. The sessions addressed distinct objectives: Day 1 focused on the importance of strengthening personal resources, Day 2 introduced positive coping strategies to reinforce these resources, and Day 3 centred on developing an action plan (see 3.3 for a detailed description of the training). Each training day followed a consistent three-phase format involving a theoretical presentation, a group discussion or activity (often based on tasks completed between sessions), and individual exercises. Figure 7 provides an overview of the research timeline. The training program draws on the principles of Positive Psychological Interventions (PPI), which emphasise the development of strengths, flourishing, and optimal functioning (Gable & Haidt, 2005). Because it addresses four personal resources within a unified framework, the program qualifies as a multi-component PPI, integrating several evidence-based exercises targeting multiple theoretical components in a single intervention (van Agteren et al., 2021). While multi-component PPIs have proven effective in both clinical and non-clinical contexts, research examining their simultaneous impact on multiple personal resources in educational settings remains limited (Rahm & Heise, 2019).

To evaluate the effectiveness of the intervention, a pre-test–post-test control group design was used, with follow-up assessments. Participants were assigned to either the experimental group (EG; n=42), which received the training, or the waitlisted control group (CG; n=31),

which received the training only after the follow-up measurement. Teachers completed questionnaires at three time points, pre-test (T1), post-test (T2), and follow-up (T3), to self-report on their personal resources (resilience, self-efficacy, SOC strategies, and OFTP), well-being, and work engagement. The pre-test was administered at least two weeks prior to the intervention, the post-test immediately after the third training day, and the follow-up occurred two months later (only for the experimental group). This schedule allowed a one-month interval between each training session, giving participants ample time to practice and integrate the newly acquired strategies.

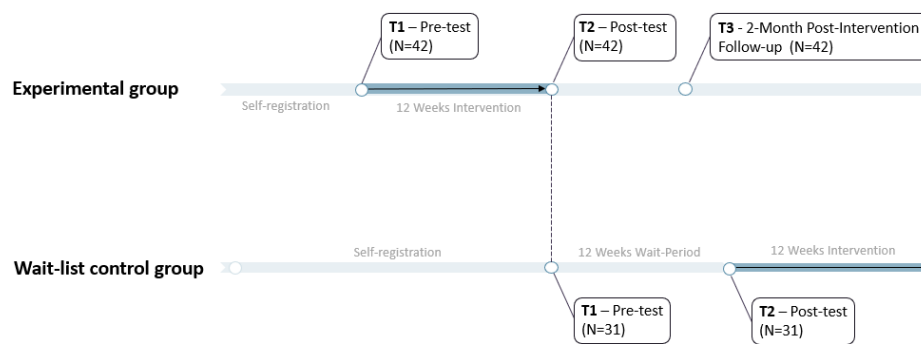


Figure 7. Research timeline

3.3 The intervention

The intervention was designed to strengthen the personal resources of late-career early childhood teachers and to provide them with practical strategies to manage professional demands. Structured over three full-day sessions, the training followed the phases of the Transtheoretical Model (TTM; Prochaska & DiClemente, 1982; Prochaska et al., 1994) and drew on the Job Demands-Resources (JD-R) framework (Bakker & Demerouti, 2023). Core personal resources targeted included resilience, self-efficacy, occupational future time perspective (OFTP), and selection, optimisation, and compensation (SOC) strategies (Grover et al., 2018; Park et al., 2020).

Day 1 introduced the Precontemplation and Contemplation phases of the TTM. The session began with a World Café activity (Fouché & Light, 2011), facilitating dynamic peer discussion about professional challenges, expectations, and resources. Participants were then introduced to the JD-R model and its implications for work engagement, well-being, and professional learning (Blanco-Donoso et al., 2017). A focus was placed on self-assessing personal resources through four resource profiles (Brouhier et al., 2023), activating TTM cognitive processes such as dramatic relief and environmental reappraisal (Bernard et al., 2014). A take-home assignment encouraged participants to map their job demands and

resources, reflect on their professional constraints, and seek feedback from trusted colleagues.

Day 2 supported the Contemplation and Preparation phases, focusing on coping strategies and resource mobilisation. Participants discussed everyday stressors and collectively identified solutions. Complementary inputs from the literature included resilience-building (Bakker et al., 2020; Dishon-Berkovits et al., 2023), mindfulness (Hartfiel et al., in Abdin et al., 2018), and cognitive reframing (Robson & Troutman-Jordan, 2014). Practical tools such as the Pareto principle (Kirillov et al., 2015), the Deming cycle (Liu, 2024; Maruta, 2012), Pomodoro time-blocking, and SMART goal setting (Latham & Locke, 2007) were introduced to foster regulation and prioritisation. A second assignment included writing a letter to their future self and planning actions aligned with personal and professional goals.

Day 3 corresponded to the Action and Maintenance phases. It began with a group reflection on previous exercises and the construction of personalised action plans using the “if–when–where–how” method (Müller et al., 2016) and SMART goal setting. The session ended with a guided reflection and the post-test questionnaire to consolidate changes, with participants identifying which personal resource they intended to continue strengthening. The structure of the professional development programme, including specific activities and learning goals, is detailed in Table 15. A full description of the training, materials, and implementation procedures is available in the Appendix C.

Table 15. Overview of training activities, resources, and learning objectives

Time	Activities	Associated resources	Underlying objectives
Day 1	World café	Self-efficacy	Foster a sense of relatedness among participants by encouraging the sharing of common professional constraints and personal resources developed throughout their careers. Promote the realisation that decreases in personal resources are a shared experience, reducing feelings of isolation
	Lecture	All four resources	Provide a comprehensive introduction to the JD-R framework and the significance of personal resources such as resilience, self-efficacy, SOC strategies, and OFTP. Foster cognitive understanding of the links between work engagement, well-being, and personal resource mobilisation
Assignment 1	JD-R model	All four resources	Encourage participants to actively apply the JD-R model to their own professional contexts, identifying key personal and job-related resources and demands. Facilitate critical reflection on the current balance/imbalance between demands and resources
	Personal resources identification	All four resources	Deepen self-awareness by identifying when and how personal resources are mobilised in response to work demands. Help participants recognise areas requiring reinforcement to sustain engagement and well-being
	Peer feedback	Self-efficacy	Strengthen self-efficacy by comparing self-assessment with peer feedback. Support participants in validating their perceptions of their resource balance and building confidence in their resourcefulness

Day 2	Small group discussions	All four resources	Promote collaborative reflection and peer learning by sharing coping strategies and competencies developed through challenging work situations. Reinforce social support as a vital job resource
	Lecture	SOC Strategies	Present practical tools (e.g., time management with Pareto, SMART goals, Deming cycle) to develop adaptive strategies based on Selection, Optimisation, and Compensation principles, enabling participants to deal more efficiently with work-related challenges
	Lecture	Self-efficacy	Introduce cognitive-behavioural techniques for reframing professional challenges. Strengthen participants' self-efficacy by enhancing their perceived control over difficult work situations and promoting a growth-oriented mindset
	Mindfulness and yoga practices	Resilience	Provide participants with accessible stress management tools, such as basic mindfulness and breathing techniques (e.g., ABC of De-stressing), to foster emotional regulation, enhance resilience, and support mental health in demanding contexts
Assignment 2	Career tree	Self-efficacy and OFTP	Encourage participants to envision their future professional trajectories by creating a career tree and describe the skills, competencies, and experiences required to fully ripen the fruits of their future career. Strengthen occupational future time perspective by focusing on opportunities rather than limitations and breaking long-term goals into small, attainable steps to foster proactive behaviour
	Letter to your future self	Self-efficacy	Engage participants in a self-empowerment exercise aimed at visualising future growth, consolidating motivation, and reinforcing positive expectations regarding their personal and professional development. Participants were invited to envision themselves achieving the values underlying their career opportunities, to write a supportive letter to their future selves, and to program its delivery via email as a reminder of their aspirations and commitments over time
	Experimentation with one tool	Participants' choice	Support the transfer of learning into practice by encouraging participants to experiment with a selected tool aimed at strengthening one of their personal resources, fostering self-directed development
Day 3	Personalised action plan	SOC strategies and OFTP	Guide participants in designing a realistic, personalised action plan to manage significant work-related demands and sustain personal resource development, using SOC principles and goal-setting frameworks
	Personalised action plan (continued)	OFTP	Reinforce future-oriented thinking by setting sub-goals that are specific, attainable, and aligned with professional aspirations. Encourage a long-term vision of career sustainability
	Self-reflective exercise	Self-efficacy	Consolidate participants' learning experiences through structured self-reflection, encouraging them to assess their personal evolution throughout the programme, identify areas of growth, and acknowledge progress made towards strengthening their resources

3.4 Measures

The questionnaires were identical for all the participants and number of measurements (three in total). The (sub)scales used were translated into French and back translated into English to check correspondence with the original versions (Ozolins et al., 2020). In accordance with the guidelines by Little (2024) all variable demonstrated acceptable to good internal consistency. Reliability coefficients (Cronbach's α) for all measures at Time 1 and Time 2 are presented in Table 16.

3.4.1 Personal resources

Selection, optimisation, and compensation strategies (SOC) were measured using scales developed by Abraham and Hansson (1995). Participants responded on a 5-point scale (1 = *not at all*; 6 = *to a very great extent*). Selection was measured through four items, with an example being: "I now delegate low-priority responsibilities to others". Optimisation was measured with four items, for example: "I now try to polish rusty skills and abilities so that my job performance won't suffer". Finally, compensation was measured with four items. An example is: "I am now more careful about how I present myself to others at school".

Occupational future-time perspective (OFTP) was measured with an adapted version of the 11-item scale developed by Zacher and Frese (2009) who developed this scale on basis of the general FTP scale of Lang and Carstensen (2002). The five items used were assessed on a 5-point scale ranging from 1 (*does not apply at all*) to 5 (*applies completely*). Only one of Lang and Carstensen's (2002) two dimensions of OFTP was measured (i.e., remaining opportunities) which we adapted by adding the word "at school" to each item (e.g., "My professional future at school is full of possibilities").

Teachers' self-efficacy for learning and development (TSE) is defined as teachers' belief in their competence and abilities to organise and execute courses of action regarding professional learning activities (Maurer, 2001; Tschannen-Moran & Woolfolk-Hoy, 2001). Self-efficacy for learning and development was measured using a 6-item instrument originally created by Fletcher et al. (1992) that assesses teachers' efficacy beliefs, confidence, and capacity to learn and engage in learning and development activities in the workplace (Armstrong-Stassen, 2008). Participants answered on a 5-point Likert-scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*, e.g., "I have the ability to develop new work-related skills").

Resilience (RAS) was measured with the 12-item Resilience Appraisal Scale of Johnson and colleagues (2010). Participants indicated to what extent each statement applied to them using a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). This scale is made up of three sub-scales measuring individuals' ability to cope with emotions, solve problems, and seek help from someone (e.g., "I can put up with my negative emotions", "I can generally solve problems that occur", "If I were in trouble, I know people who would be willing to help me", respectively).

3.4.2 Outcome variables

Teacher work engagement (WE) was measured based on Utrecht Work Engagement Scale (UWES-9) from Schaufeli and colleagues (2003). The UWES-9 is an abbreviated scale measures three sub-dimensions, vigor, dedication, and absorption. Bostic and colleagues

(2023) adapted the scale to early education teachers and decided to drop one item (“I get carried away when I am working”) which created confusion and served initially to supplement another item “I am immersed in my work” (Schaufeli et al., 2003). The mean of eight items, captured by a 5-point type scale (0=Never to 5=Always), was calculated in this sample, with higher means representing higher work engagement.

Teacher well-being (WB) scale comprises 16 items assessing teachers’ experience in the workplace, developed by Collie et al. (2015). It evaluates three factors: workload well-being, organisational well-being and student interaction well-being. Teachers were instructed to rate their well-being concerning various aspects of their work using a 5 points-Likert scale, ranging from 1 (negatively) to 5 (positively).

All statistical analyses were run using SPSS 29.0 (IBM SPSS Statistics, Armonk, USA). Repeated measures Analyses of Variance (ANOVA) with factors time (pre-test vs. post-test) and group (control group vs. experimental group) were employed to test the expected increase due to the training. For all statistical analyses, the Alpha-level was set as $p < .05$. The main effects and interaction between the different variables were studied using the Bonferroni Correction to estimate significance. Partial eta square (η^2_p) served as an indicator of effect size (Richardson, 2011), which are judged to be small at .01, medium at .06, and large at .14 (Cohen, 1988).

4. Results

4.1 Descriptive analyses

The correlation matrix between all variables at all time points are displayed in Table 16. The four personal resources were found to be significantly related to work engagement in pre-test (Time 1 or T1) and post-test (Time 2 or T2) measurements.

Table 16. Means, standard deviations, correlations, and cronbach’s α (on the diagonal) of the variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. SOC T1	(.79)											
2. OFTP T1	.54**	(.84)										
3. TSE T1	.41**	.66*	(.80)									
		*										
4. RAS T1	.12	.19	.29*	(.85)								
5. WE T1	.25*	.35*	.39*	.42*	(.82)							
		*	*	*								
6. WB T1	-.09	.05	.14	.42*	.60*	(.88)						
				*	*							
7. SOC T2	.69**	.50*	.41*	.18	.37*	.08	(.82)					
		*	*		*							
8. OFTP T2	.25*	.49*	.53*	.28*	.48*	.22	.49*	(.89)				
		*	*	*	*		*					
9. TSE T2	.23*	.35*	.61*	.35*	.40*	.25*	.46*	.74*	(.87)			
		*	*	*	*	*	*	*				
10. RAS T2	-.07	.05	.20	.75*	.36*	.45*	.21	.44*	.48*	(.87)		
				*	*	*	*	*	*			
11. WE T2	.02	.16	.24*	.50*	.75*	.60*	.24*	.46*	.55*	.55*	(.85)	
				*	*	*	*	*	*	*	*	
12. WB T2	-.10	.13	.12	.32*	.41*	.50*	.20	.29*	.37*	.42*	.61*	(.91)
				*	*	*		*	*	*	*	*

<i>M</i>	3.07	2.33	3.43	3.72	3.55	3.55	3.08	3.01	3.78	3.88	3.76	2.98
<i>SD</i>	.66	.90	.75	.57	.83	.56	.65	1.00	.73	.55	.82	.60

Note. M = mean; SD = standard error; * $p < .05$; ** $p < .01$

4.2 Preliminary analyses

Assumptions for conducting ANOVAs were satisfied, as independent t-tests revealed no statistically significant baseline differences between the two groups prior to the intervention, except for well-being, where the experimental group reported higher scores (see Table 17).

Table 17. Means, standard deviations, and significance of differences between experimental and control groups before the intervention (time 1)

Variables	Experimental group (<i>n</i> = 42)	Control group (<i>n</i> = 31)	<i>t</i> (71)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	
SOC strategies	2.93 (.64)	3.16 (.68)	1.06
OFTP	2.12 (.82)	2.59 (.97)	2.10
TSE	3.34 (.72)	3.53 (.77)	1.00
Resilience	3.77 (.60)	3.42 (.87)	-1.03
Work engagement	3.61 (.82)	3.42 (.87)	-1.15
Well-being	3.22 (.49)	2.91 (.51)	-2.70**

Note. M = mean; SD = standard error. *** $p < .01$; ** $p < .05$.

4.3 Overall effect of the intervention

Before conducting the ANOVAs, normality was assessed with skewness and kurtosis values. All values fell between -2 and +2, indicating a normal univariate distribution (George & Mallery, 2010). Consistent with Hypothesis 1, we expect that LCT who participated in the training will report a greater improvement in their personal resources between the pre-test (T1) and post-test (T2) assessments. Two Group (experimental vs. control group) x Time (pre-test vs. post-test) repeated measure analyses of variance (ANOVAs) were conducted on each variable, with the group as the between-subjects factor and time as the within-subject factor. A Group x Time interaction would demonstrate a significant change between the two groups. First, results showed a significant Group x Time interaction for all four personal resources. The training had a substantial impact on the improvement of **SOC strategies** ($F(1,71) = 4.874, p = .03, \eta_p^2 = .06$); **occupational future time perspective** ($F(1,71) = 35.286, p < .001, \eta_p^2 = .33$); **teachers' self-efficacy** ($F(1,71) = 28.203, p < .001, \eta_p^2 = .28$); and **resilience** ($F(1,71) = 11.060, p = .001, \eta_p^2 = .13$). The interaction effects are depicted in Figure 8 to 11.

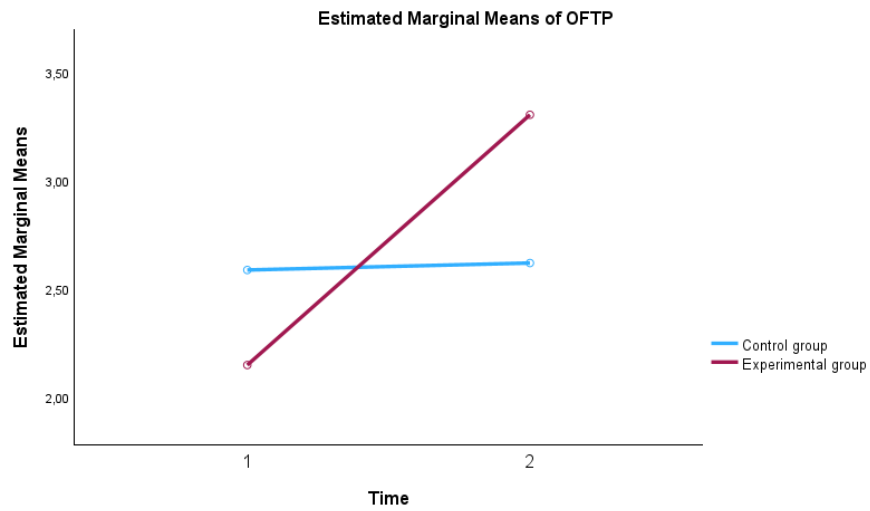


Figure 8. Graphic Representation of OFTP at Time 1 and Time 2 for the Experimental (pre- and post-test) and Control Groups

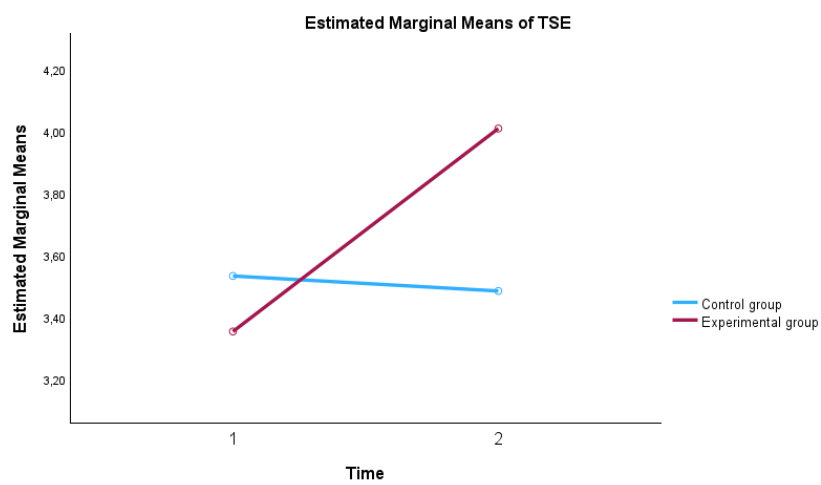


Figure 9. Graphic Representation of Teachers' Self-efficacy at Time 1 and Time 2 for the Experimental (pre- and post-test) and Control Groups

Fi

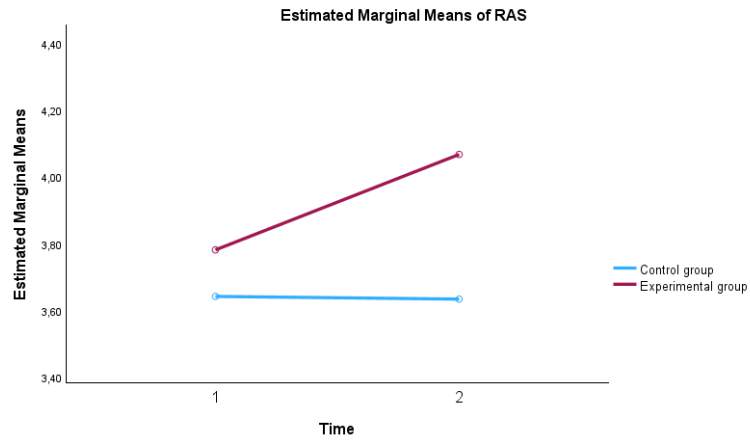


Figure 10. Graphic Representation of Resilience at Time 1 and Time 2 for the Experimental (pre- and post-test) and Control Groups

Hypothesis 2 proposes that LCT who received the training will report greater improvement in work engagement after the training. The repeated measures ANOVA demonstrated that the training had a substantial impact on the improvement of **work engagement** ($F(1,71) = 8.977, p = .004, \eta_p^2 = .11$).

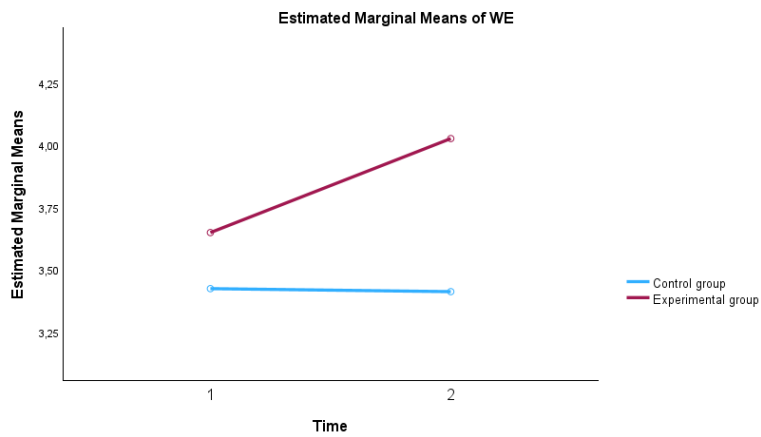


Figure 11. Graphic Representation of Work Engagement at Time 1 and Time 2 for the Experimental (pre- and post-test) and Control Groups

The means and standard deviations between the experimental group and the control group at post-test for each variable and group are displayed in Table 18. Overall, after finding interactions between the two groups between pre-test and post-test, significant differences between the experimental and the control group were observed after the intervention, except for SOC strategies. Post-hoc tests (Bonferroni-adjusted) showed that, as assumed, most personal resources of LCT who participated in the training differed significantly from LCT' from the control group.

Hypothesis 3 posits that LCT who have participated in the training will report an increase in well-being from pre-test to post-test. Given this initial imbalance, an ANCOVA was deemed more appropriate to assess the effect of the intervention on well-being outcomes. This allowed for control of baseline differences and a more accurate estimation of group effects at post-test. Levene's test confirmed the assumption of homogeneity of variances ($F(1, 71) = 0.37, p = .546$). The overall model was significant and explained a substantial proportion of the variance in post-test well-being ($R^2 = .277$, adjusted $R^2 = .256$). Baseline well-being was a significant predictor of post-test scores ($F(1, 70) = 18.22, p < .001, \eta^2 = .207$). However, after controlling for baseline levels, the effect of group was not statistically significant ($F(1, 70) = 2.21, p = .141, \eta^2 = .031$).

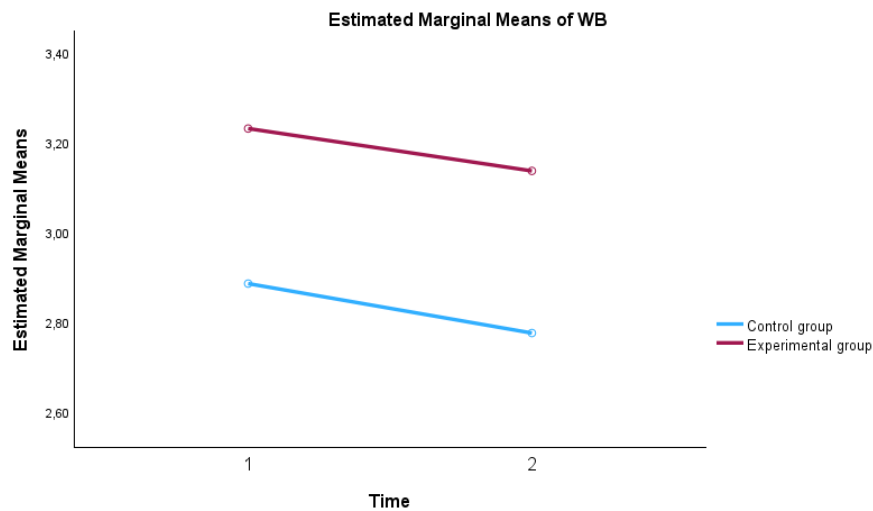


Figure 12. Graphic representation of well-being at time 1 and time 2 for the experimental (pre- and post-test) and control groups

Table 18. Means, standard deviations, and mean differences for multiple comparisons (Bonferroni) between experimental and control groups after the training (Time 2)

Variables	Experimental group (n = 42)	Control group (n = 31)	Bonferroni T2 EG vs. CG
	<i>M (SD)</i>	<i>M (SD)</i>	
SOC strategies	3.43 (.61)	3.33 (.70)	.098
OFTP	3.30 (.91)	2.62 (1.00)	.685**
TSE	4.01 (.51)	3.48 (.87)	.524**
Resilience	4.07 (.55)	3.63 (.46)	.433***
Work engagement	4.03 (.74)	3.41 (.80)	.615***
Well-being	3.13 (.10)	2.77 (.53)	.362**

Note. M = mean; SD = standard error; *** $p < .01$; ** $p < .05$.

Hypothesis 4 anticipated that LCT who received the training will report greater improvement in the four personal resources within the experimental group after the follow-up measurement (T3). The means, standard deviations for each variable are displayed in Table 19. The repeated measures ANOVAs demonstrated that the training had a substantial impact on the improvement of **SOC strategies** ($F(1,36) = 31.932, p < .001, \eta_p^2 = .47$); **occupational future time perspective** ($F(1,36) = 40.136, p < .001, \eta_p^2 = .53$); **teachers' self-efficacy** ($F(1,36) = 25.303, p < .001, \eta_p^2 = .41$); and **resilience** ($F(1,36) = 43.920, p < .001, \eta_p^2 = .55$). Post-hoc tests (Bonferroni-adjusted), displayed in Table 7, revealed that, as assumed, most variables differed significantly after the follow-up.

Table 19. Means, standards deviations, and mean differences for multiple comparisons (Bonferroni) for the experimental group among the three time points of the training.

Variables	Pre-test (T1)	Post-test (T2)	Follow-up (T3)	Bonferroni T1-2	T1-3	T2-3
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>			
SOC strategies	2.93 (.11)	3.43 (.10)	3.53 (.09)	.500***	.592** *	.092
OFTP	2.12 (.13)	3.29 (.15)	3.29 (.16)	1.162***	1.168* **	.005
TSE	3.34 (.12)	4.04 (.08)	4.02 (.10)	.698***	.680** *	-.018
Resilience	3.77 (.09)	4.07 (.09)	4.20 (.09)	.295***	.427** *	.132
Work engagement	3.61 (.13)	4.01 (.12)	3.94 (.12)	.402**	.331**	-.071
Well-being	3.22 (.08)	3.13 (.10)	3.43 (.09)	-.089	.209	.298**

Note. M = mean; SD = standard error; *** $p < .01$; ** $p < .05$.

Hypothesis 5 and 6 anticipated that LCT who received the training will report greater improvement in well-being and in work engagement within the experimental group, across time after the follow-up measurement. Repeated measures ANOVAs confirmed the significant impact of the training on work engagement after the follow-up ($F(1,36) = 14.235$, $p = <.001$, $\eta_p^2 = .28$) and on well-being between Time 2 and Time 3 ($F(1,36) = 5.927$, $p = .02$, $\eta_p^2 = .14$).

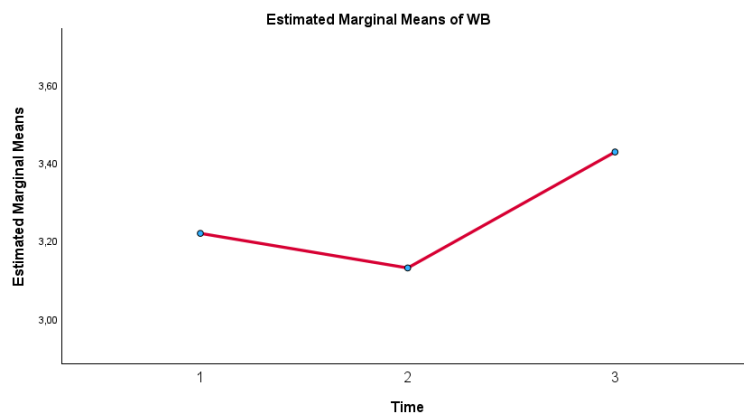


Figure 13. Graphic representation of work engagement at time 1, 2, and 3 for the experimental group (pre-, post-test, and follow-up)

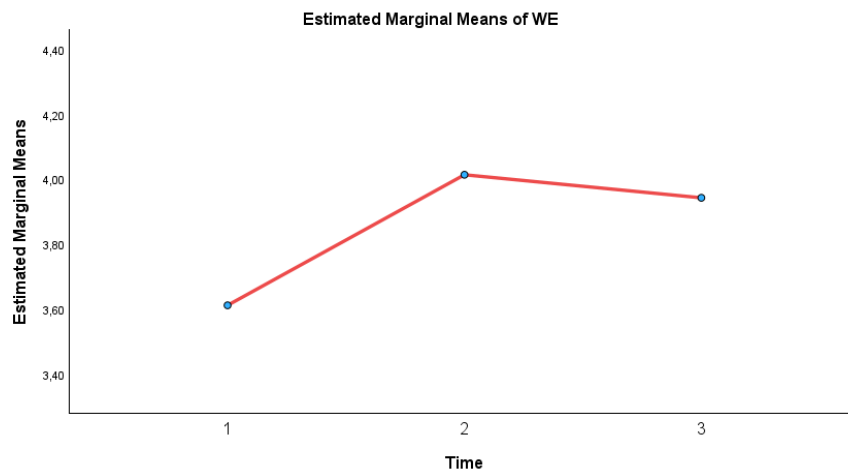


Figure 14. Graphic representation of work engagement at time 1, 2, and 3 for the experimental group (pre-, post-test, and follow-up)

5. Discussion

5.1 Main findings

This study aimed to examine whether a theoretically grounded training program, implemented through a quasi-experimental design, could sustainably enhance personal resources in early childhood late-career teachers, facilitating a shift to a more favourable profile and improving their work engagement and well-being over time. Findings revealed that, compared to the control group, the experimental group exhibited significant improvement in SOC strategies, teacher self-efficacy, occupational future time perspective, and resilience, with moderate to strong effect sizes. Regarding work engagement, the intervention produced an immediate and substantial increase from pre- to post-test, which remained stable at follow-up, suggesting a direct and lasting effect. This aligns with previous meta-analyses demonstrating a positive association between personal resources and work engagement across occupational groups (Crawford et al., 2010), as well as findings emphasising the central role of teacher self-efficacy in fostering engagement (Skaalvik & Skaalvik, 2014). Dicke et al. (2018) further highlighted the reciprocal relationship between self-efficacy, well-being, and work engagement, suggesting that enhancing one domain can stimulate growth in the others.

In contrast, the trajectory for well-being followed a non-linear pattern: a slight decrease immediately after the intervention was observed, followed by a significant increase between post-test and follow-up. This delayed improvement suggests that well-being gains may require a period of psychological adjustment, allowing participants time to integrate new coping strategies into their daily routines and to experience tangible benefits. These findings diverge from the assumptions of the positive-activity model (Lyubomirsky & Layous, 2013; Meyers & Van Woerkom, 2017), which posit that engaging in positive resource-enhancing activities leads to immediate affective boosts contributing to longer-term well-being. Instead, our results partially align with Fredrickson's (2001) broaden-and-build theory, emphasising how positive emotions progressively build durable personal resources over time. As noted in a recent systematic review on teacher well-being, relatively few studies have examined teachers' well-being over the long term (Hascher & Waber, 2021), and even fewer have focused on the context of ECE. Therefore, it is essential to address this gap in future research.

Beyond the overall improvement observed in work engagement and well-being, it is essential to examine how individual personal resources evolved throughout the intervention. While the training produced significant gains across all four targeted resources, self-efficacy, resilience, OFTP, and SOC strategies, the magnitude and implications of these improvements varied. Understanding these differentiated patterns is key to identifying the specific mechanisms through which personal resources contribute to sustaining professional vitality among late-career teachers. In particular, self-efficacy emerged as a pivotal resource, reinforcing prior findings by Skaalvik and Skaalvik (2014), who emphasised its central role in fostering work engagement. Similarly, Dicke et al. (2018) highlighted self-efficacy's dual function as both a catalyst and an outcome in the interplay between engagement and well-being, suggesting a virtuous cycle that could be leveraged to enhance teachers' career sustainability.

Improvement in OFTP also played a notable role. An open future orientation fosters greater goal setting, proactive planning, and positive anticipation regarding professional trajectories, particularly important for teachers approaching the later stages of their careers. Research suggests that cultivating an expansive and optimistic view of one's professional future is crucial for maintaining motivation and sustained engagement (Zacher & Frese, 2009). Supporting this view, a meta-analysis revealed that OFTP significantly predicts a wide range of outcomes, including achievement, well-being, health behaviours, and retirement planning, beyond the explanatory power of major personality traits (Kooij et al., 2018). These findings underline the pivotal role of OFTP in organizational psychology theories and highlight its relevance for sustaining career engagement among late-career teachers. By reinforcing an open OFTP, the intervention may thus have contributed to a forward-looking mindset, counteracting the risks of disengagement or might eventually lead to a premature exit from the profession.

Moreover, SOC strategies demonstrated the smallest effect size among the resources evaluated. Several explanations could account for this moderate impact. First, SOC strategies are highly context-dependent and may be more difficult to implement in the multifaceted professional environments typical of ECE. For example, selective prioritisation of tasks may be constrained by the holistic nature of early childhood teaching responsibilities. Second, growing professional demands may limit opportunities to effectively apply SOC strategies, particularly in resource-constrained settings where workload reductions are not feasible. Third, applying SOC strategies often requires collaboration and understanding from colleagues, making their success partially dependent on the broader social environment. While some studies have raised concerns that individualised SOC behaviours could potentially burden co-workers (Müller & Weigl, 2017; Tims et al., 2015), empirical evidence generally suggests that SOC use among older employees is positively associated with desirable social behaviours in the workplace (Moghimani et al., 2017). Nevertheless, the inherently collaborative nature of ECE settings may complicate the transfer of SOC strategies into daily practice, highlighting the need for organizational support to facilitate their effective application.

Beyond the specific outcomes measured in this study, findings also contribute more broadly to interdisciplinary discussions spanning educational psychology, organisational behaviour, and teacher continuous professional development. From an educational psychology perspective, the strengthening of personal resources such as self-efficacy and resilience supports theories of self-regulated learning and career development, highlighting the importance of psychological capital in sustaining motivation and professional efficacy over time (Luthans & Youssef-Morgan, 2017; Beltman et al., 2018). In the field of organisational behaviour, the observed improvement in work engagement and well-being aligns with the principles of the JD-R model (Bakker & Demerouti, 2023), illustrating how targeted interventions can strategically enhance employees' capacities to manage occupational stressors and promote organisational sustainability. These interdisciplinary insights reinforce the value of developing multidimensional support strategies to foster the sustainability of the teaching workforce over time.

5.2 Limitations

Although this study offers important insights into the development of personal resources and their impact on LCT' work engagement and well-being, several limitations must be acknowledged. These limitations, along with the emerging findings, point toward valuable avenues for future research aimed at refining intervention strategies and deepening our understanding of career sustainability in the ECE sector.

First, the sample composition may introduce bias and limit the generalisability of the findings. Participation in the training program was voluntary and officially recognised as a professional development activity accessible to teachers from all networks in French-speaking Belgium. This self-selection suggests a potential predisposition towards personal growth and adaptation among participants, which may have influenced their responsiveness to the intervention. Moreover, participants' positive expectations or motivation linked to receiving specialised attention (i.e., Hawthorne effect) could have amplified the observed outcomes independently of the intervention itself. As highlighted by Berkhout et al. (2022), such expectancy effects must be carefully considered in interpreting intervention-based findings. Future research could incorporate regular video observations or other objective behavioural measures to mitigate these biases and more accurately assess the true impact of similar interventions (Aslan et al., 2022).

Second, the sample was characterised by near-total gender homogeneity, with almost all participants identifying as female. While this reflects the broader demographic reality of the ECE workforce (Brophy-Herb, 2023; Thorpe et al., 2020), it nevertheless restricts the generalisability of the findings to male late-career teachers. Future studies should aim to recruit more gender-diverse samples to examine potential differences in resource development, work engagement, and well-being across genders.

Third, all measures relied exclusively on self-reported data, which may introduce biases such as social desirability or common method variance (Podsakoff et al., 2003). Although self-report instruments are widely used and considered appropriate for assessing subjective constructs like self-efficacy, resilience, and well-being, future research would benefit from triangulating self-reported data with objective indicators (e.g., attendance records for professional learning activities, external assessments of work engagement) or qualitative methods (e.g., peer or supervisor evaluations) to strengthen the validity and robustness of the findings.

Fourth, the timing of the data collection points differed slightly between the experimental group (EG) and the control group (CG). Specifically, the EG completed their pre-test (T1) approximately two weeks before the intervention, whereas the CG, being on a waitlist, did not complete the pre-test at the same time. Although this waitlist control design allowed for ethical considerations by ultimately granting all participants access to the intervention, the lack of perfectly synchronised baseline measurements introduces a potential limitation. It raises the possibility that external factors occurring between the two measurement periods could have differentially influenced the groups' initial responses. Future research should aim to synchronise data collection points to better isolate the effects of the intervention and to minimise the risk of temporal confounds.

Finally, although the quasi-experimental design employed in this study provides valuable insights into the development of personal resources and their association with improved work

engagement and well-being, it does not allow for definitive causal inferences. Without random assignment, the potential influence of unmeasured confounding variables cannot be fully ruled out. While growth models and panel studies can enrich future analyses by capturing trajectories of change over time, they cannot substitute for the internal validity provided by randomized controlled trials (RCT). To establish stronger causal relationships between personal resource development and teacher outcomes, future research should prioritise the use of RCT or similarly rigorous experimental designs that better control for confounding factors through randomisation or manipulation (see Beames et al., 2023 for a meta-analysis supporting this need).

5.3 Implications

Building on the findings of this study, several practical implications emerge regarding the support of LCT in early childhood education settings. The intervention demonstrated that strengthening personal resources such as self-efficacy, resilience, OFTP, and SOC strategies can enhance work engagement and, over time, promote well-being. These results align with prior research underlining the critical role of personal resources in sustaining teachers' commitment to the profession (Beltman et al., 2018).

Given the high emotional and physical demands, low pay, and challenging working conditions characteristic of ECE settings (Thorpe et al., 2020; Brophy-Herb, 2023; Creagh et al., 2023), targeted support for late-career teachers becomes particularly urgent. Continuous professional learning should therefore extend beyond technical or didactic skills to include programs aimed at strengthening personal resources and fostering career reflection (Vangrieken et al., 2017). Such interventions can contribute not only to individual well-being but also to the creation of more supportive and resilient school environments.

More broadly, these findings highlight the importance of designing multidimensional interventions that integrate psychological, organisational, and educational approaches. Future professional development policies should encourage the inclusion of programs that address both instructional competencies and personal resource development, helping teachers to navigate their evolving professional roles throughout their careers. This broader vision for teacher development could strengthen retention, enhance professional fulfilment, and support better educational outcomes for young learners, as highlighted by Kwon et al. (2020).

PART III

General discussion

General discussion

The final part of this dissertation brings together the findings, theoretical reflections, and practical implications arising from the five empirical studies. **Chapter 9** opens with a synthesis of the key insights generated by the preceding analyses, offering an integrated perspective on the professional experiences, challenges, and learning experiences of late-career teachers in early childhood education. It further examines how these findings contribute to refining existing theoretical frameworks, particularly around the dynamic interplay of job demands, resources, and professional identity in late-career phases.

Chapter 10 then critically reflects on the limitations of this research, outlining methodological and conceptual boundaries and suggesting avenues for future inquiry. It also considers the practical significance of these findings, translating them into specific recommendations for practitioners, policymakers, and professional development leaders. Together, these final chapters seek to bridge the gap between research and practice, fostering a nuanced understanding of how to support and sustain late-career teachers' work engagement and well-being in complex educational landscapes.

Chapter 9

Main findings, methodological and theoretical contributions

Main findings, methodological and theoretical contributions

This dissertation set out to investigate how professional learning and work engagement can be meaningfully supported among late-career teachers, with a particular focus on those working in early childhood education. Central to this dissertation was an examination of the complex interplay between job demands, job resources, and personal resources. The five empirical studies presented in the preceding chapters were each designed to address the four key challenges outlined in **Chapter 1**. Each study contributes unique evidence to clarify, deepen, or challenge current understandings of how late-career teachers experience, interpret, and sustain professional development in the later stages of their careers. This concluding chapter synthesises the main findings emerging from the five studies. In doing so, it revisits how each of the four key challenges, defining LCT and their professional learning experiences; understanding the conditions shaping their engagement; leveraging personal and job resources; and designing interventions that strengthen resources, were addressed across the different research phases. Finally, the chapter revisits the central theoretical model of this dissertation, the Job Demands-Resources model, to critically reflect on its analytical potential and limitations in capturing the situated, relational, and evolving nature of late-career teachers' work and learning.

1. Addressing key challenge 1: characterising late-career teachers and their professional learning experiences

Study 1 sought to address the underexplored area of professional development among LCT typically those aged 50 and above, through a systematic literature review. The corpus of 12 peer-reviewed studies revealed definitional inconsistencies and conceptual fragmentation regarding LCT. Terms such as “experienced,” “veteran,” “senior,” or “expert” were used interchangeably, with thresholds ranging from 20 to over 30 years of experience and chronological markers spanning from 50 to 65 years old (Armour & Yelling, 2004; Beutel & Spooner-Lane, 2009; Geeraerts et al., 2018). While some studies employed career-stage models (e.g., Huberman, 1989; Baker, 2005), most relied on pragmatic or institutionally defined criteria, thereby flattening the rich diversity of lived trajectories (Brouhier et al., 2023). This suggests that “late-career teacher” is not a static or universal category but a construct requiring more relational and situated understandings. Study 1 also illuminated how within this category exist both lifelong teachers and late entrants, namely second-career teachers (Coppe et al., 2024; Schwartz & Dori, 2020). In the field of early childhood education, this diversity is further amplified by the distinct training requirements and regulatory standards associated with different roles (Powers et al., 2025). Rather than a definitional flaw, this points to deeper epistemological tensions, indicating that late-career teaching is an evolving professional condition shaped by organisational cultures, personal agency, and shifting identities (Kelchtermans, 2009; Raduan & Na, 2020).

Beyond definitional inconsistencies, the findings call into question the applicability of linear career-stage models that conceptualise teaching careers as predictable progressions from

growth to decline (Huberman, 1989; Sikes, 2000). Contrary to these models, **Study 1** and complementary insights from **Study 4** underscore that many LCT continue to innovate, mentor, and reframe their identities well into later career stages (Hargreaves & Elhawary, 2019). This challenges deficit-based assumptions and underscores the need for policies that foster LCT' ongoing learning as a critical component of career sustainability (Kelchtermans, 2009). **Study 2** provides further evidences that late-career is not just a chronological marker but an embodied, relational experience. This is illustrated by the physical and relational demands in ECE, which show that it is shaped by emotional labour, collaborative demands, and gendered expectations. The quantitative profiles in **Study 3** highlight how personal and job resources coalesce in diverse ways, confirming that LCT' experiences are highly differentiated even among teachers of similar age or tenure. Together, these findings argue that a more nuanced conceptual framework is needed, one that recognises the situated nature of professional learning and acknowledges how evolving demands intersect with personal resources.

Equally critical is the role of social representations in shaping LCT' identities and access to professional learning. Despite limited empirical support (Marchiondo et al., 2019), deficit-based stereotypes persist in policy and practice (Bal et al., 2011; Levy & Macdonald, 2016), often marginalising LCT within decision-making processes and professional development initiatives. **Study 4** reveals how LCT themselves perceive and resist these narratives, describing how such representations erode their sense of belonging and professional value. Recent scholarship reinforces this, highlighting the importance of inclusive leadership and culturally responsive practices (Fagan et al., 2022; Polat & Turhaner, 2024; Murwanto, 2024). These findings underscore the need for leadership practices that go beyond symbolic inclusion to actively foreground LCT' contributions as engaged and experienced professionals. **Study 3** further demonstrates that teachers with supportive relational environments report higher engagement and well-being, while those lacking such support risk isolation. This suggests that institutional culture and leadership practices play pivotal roles in shaping how LCT experience their late-career trajectories and access meaningful professional development opportunities.

The role of informal, relational learning also emerges as a central theme across studies. **Study 1** identified how LCT often rely on peer dialogue, mentoring, and reflective practices over structured, top-down courses (Bakkenes et al., 2010; Celik et al., 2021; Makhmetova et al., 2025). **Study 4** reinforces that when embedded in trust-based relationships, these informal practices serve as powerful catalysts for professional renewal and agency (Hollweck, 2019; Morcom & MacCallum, 2022). The profiles in **Study 3** echo this finding, showing that teachers with robust relational resources report greater engagement and sustained motivation. Importantly, these insights suggest that informal learning is not inherently unstructured or idiosyncratic but can be a form of recognition and validation, particularly in contexts where formal advancement pathways are limited yet motivation and expertise remain strong. Taken together, these insights call for a fundamental reframing of late-career teaching, not as a phase of decline, but as a dynamic period of professional reinvention, relational engagement, and identity negotiation. Recent research underscores that late-career teachers continue to adapt their professional identities in response to evolving educational contexts, emphasizing the importance of agency, purpose, and sustained contribution (Beka & Gjelijaj, 2025; Hogg et al., 2024). This perspective moves beyond static or deficit-based categories to embrace more

relational, situated, and context-sensitive understandings that foreground late-career teachers' own voices, agency, and lived experiences (Li et al., 2025; Wu et al., 2024).

2. Addressing key challenge 2: understanding conditions influencing late-career teachers' work engagement and professional learning

A first major insight from **Study 2** concerns the cumulative impact of intensifying work demands on the well-being of LCT. Participants described a relentless pace, growing administrative burdens, and the emotional toll of sustained classroom management (Randall et al., 2022), all of which have become increasingly difficult to navigate over time. These findings align with literature highlighting that work-related fatigue stems from the absence of supportive structures and from insufficient institutional adaptation to evolving job demands (Bullough et al., 2014; Kelchtermans, 2017). Despite these challenges, participants expressed a strong moral and professional commitment to their work (Day & Gu, 2010). However, this engagement is often taken for granted by institutions, with few avenues for dialogue, recognition, or growth (Admiraal et al., 2019; Jansen in de Wal et al., 2020). This disconnect between personal investment and institutional support echoes recent findings by Zhang et al. (2024), who highlight that misalignments between personal and institutional narratives can erode teacher work engagement.

Importantly, these findings must also be understood in the specific context of ECE where the relational and physical demands of the profession can intensify the experiences of LCT. Unlike other educational levels, ECE professionals engage in daily practices that require sustained emotional labour and close, embodied interactions with children, such as floor-seated activities, lifting, or continuous developmental monitoring (Randall et al., 2022). For late-career teachers, these physical demands can become particularly burdensome as they age, especially when institutional adaptations are lacking. Equally significant is the high degree of relational work expected in ECE settings, including partnerships with families and collaboration with colleagues in integrated care teams (Elicker et al., 2013). While this relational dimension can be a source of deep professional satisfaction, it can also exacerbate feelings of strain when recognition and support structures are insufficient. The teachers in this study, for example, expressed pride in their sustained commitment to children's well-being, yet also described how cumulative emotional and physical demands risked undermining their motivation and well-being over time. Furthermore, this pressure is embedded in a profession that is predominantly female, where expectations of caregiving and moral commitment can amplify these challenges in later career stages (Hochschild, 1983; Molinié, 2012). Such gendered dynamics add an additional layer of complexity, intersecting with physical fatigue and the moral imperative to "give everything" for children's welfare, thus reinforcing the need for institutional adaptations that acknowledge both the physical and social dimensions of care work in ECE.

The analysis also highlighted how teachers navigate a tension between polyvalence and professional specialisation. For instance, the growing emphasis on differentiated instruction and individualized student support, particularly for children with special needs, has transformed the role of LCTs in ECE, requiring them to balance pedagogical flexibility with the risks of overload and fatigue (Pozas et al., 2022). This dual expectation, being both generalists and specialists, places significant demands on teachers, potentially leading to

increased stress and burnout. As noted by Genoud et al. (2019), the role of class teacher, which encompasses both instructional and administrative responsibilities, can be particularly demanding, especially when teachers are required to address diverse student needs in the absence of adequate institutional support. These challenges highlight the critical need to examine how evolving educational practices intersect with personal resources and systemic support structures. The dynamic interplay among these factors can either reinforce or erode teachers' long-term engagement. Moreover, these cumulative pressures and evolving responsibilities create what participants described as "critical thresholds" in their careers. While some teachers reported feeling that they remain able to meet the demands of their role, many described a precarious balance, an ongoing tension between their continued dedication and the fear that even a small additional stressor could push them into burnout or forced exit. This dynamic resonates with recent findings by Sultana and Aurangzeb (2022), who highlight that more than 70% of ECE teachers worldwide report experiencing burnout due to a combination of workload intensity and lack of recognition. This sense of working on a tightrope suggests that well-being and professional engagement for LCT in ECE are highly dynamic, shaped by both daily demands and broader career trajectories.

Another key insight relates to the underutilised potential of professional learning for LCT. While participants demonstrated a desire to learn and adapt, they found existing training offers generic and poorly aligned with their needs (Bayar, 2014; Kennedy, 2016). Many advocated for reflective, collaborative learning opportunities that explicitly recognise and build upon their expertise (Avalos, 2011; Sancar et al., 2021). Such differentiated and context-sensitive approaches are particularly critical in ECE, where cumulative demands and the relational intensity of the work require learning opportunities that are attuned to these specific challenges. This perspective supports critiques of one-size-fits-all professional development approaches and suggests that targeted, health-sensitive and collaborative strategies, such as job crafting, relational mentorship, and flexible workload adjustments, could help maintain both engagement and well-being among LCTs (Kennedy, 2016; Louws et al., 2017). Ultimately, this nuanced perspective reinforces the importance of designing professional learning environments that recognise the dynamic interplay of personal resources, team cultures, and institutional recognition, ensuring that LCTs in ECE continue to thrive and contribute meaningfully to their professional communities.

These findings from **Study 2** gain further depth and nuance when considered alongside the complementary insights from **Studies 3, 4, and 5**. **Study 3** quantitatively demonstrated that LCT' experiences of work engagement and professional are not static but instead shaped by distinct constellations of personal and job resources. The emergence of four resource-based profiles, ranging from well-equipped to poorly equipped, underscored that supportive conditions and individual assets coalesce to create varied experiences of stress and motivation. This quantitative framing aligns closely with the observations in Study 2 that, even amid high demands, many LCT sustain their moral and professional commitments when they can draw on both personal and institutional resources. This perspective echoes with van den Heuvel et al. (2010), who argue that personal resources such as self-efficacy, resilience, and organisational-based self-esteem are critical for sustaining work engagement, particularly during periods of heightened job demands. Together, these insights highlight that LCT' engagement is not solely determined by external conditions but rather emerges from the dynamic interplay of personal capacities and workplace supports that buffer strain and foster ongoing motivation.

Study 4 adds qualitative texture to these patterns, showing how LCT narrate their experiences of navigating conflicting pressures and sustaining their motivation in the face of intensifying demands. Teachers described how supportive relationships with colleagues, characterised by open dialogue, humour, and mutual aid, served as powerful buffers against the cumulative strain of ECE work. Similarly, inclusive leadership practices, where leaders actively valued LCT' contributions and created spaces for their voices to be heard, fostered a sense of belonging and relational trust. In contrast, institutional cultures that neglected to acknowledge LCT' moral and professional investments deepened feelings of marginalisation and disillusionment. These narratives highlight that LCT' engagement is not a static state but a dynamic negotiation, shaped by how they perceive recognition, validation, and their place within evolving professional communities. This resonates with recent findings by van Heijst et al., (2025), who argue that professional identity and sustained engagement among teachers in late-career phases are significantly influenced by the level of recognition and belonging they experience within their professional communities. Similarly, Semjonova (2024) underscores that identity work in teaching is an ongoing, relational process shaped by the interplay of individual agency and organisational cultures, with recognition serving as a critical lever for sustaining motivation and well-being.

The findings from **Study 5** further reinforce the dynamic nature of LCT experiences, illustrating how targeted interventions can shift the balance of demands and resources over time. While immediate post-training assessments showed only modest changes in personal resources, the follow-up data collected three months later revealed significant improvements in areas such as resilience, self-efficacy, and overall well-being. These delayed but notable gains suggest that interventions designed for LCTs should not be conceived as quick fixes or one-off training sessions, but rather as processes that require time, adaptation, and sustained engagement. Critically, the qualitative feedback collected in Study 5 highlights that participants needed a period of experimentation and reflection to fully integrate new coping strategies and to see tangible changes in how they approached their daily work. This iterative process of adjusting, testing, and gradually incorporating new practices aligns with broader theories of professional learning as identity work and not merely technical skill acquisition. As such, the findings challenge linear or short-term conceptions of "training impact," advocating instead for a more process-oriented and context-sensitive understanding of professional development. They suggest that meaningful change for LCT emerges when interventions acknowledge the relational and evolving nature of late-career work, creating spaces where teachers can reflect, negotiate new roles, and re-engage with their professional identities.

Taken together, these insights argue that supporting LCT' engagement and professional learning requires differentiated, context-sensitive approaches that recognise the complex interplay of resources, relational dynamics, and individual histories in shaping teachers' experiences. **Studies 2, 3, 4, and 5** collectively show that professional learning cannot be reduced to technical upskilling but must be understood as a relational and identity-sustaining process grounded in LCTs' sense of purpose, moral commitment, and capacity for adaptation. Study 2 reveals the intense physical and emotional demands of daily ECE practice, while the quantitative profiles in **Study 3** highlight the unequal distribution of resources that might buffer these strains. **Study 4** adds further depth, showing how relational and cultural contexts mediate these experiences, amplifying or alleviating pressures in ways that directly influence teachers' work engagement. The findings of **Study 5** demonstrate that even delayed

interventions can enhance personal resources like resilience and self-efficacy, underscoring the transformative potential of tailored, iterative support. Collectively, these studies challenge deficit-based views of late-career teaching and instead foreground the lived realities and agency of LCT as knowledgeable professionals navigating evolving and often conflicting demands. This convergence of evidence highlights that work engagement and well-being in late career are not static endpoints, but dynamic processes of negotiation shaped by the ongoing interplay of personal, relational, and systemic factors.

3. Addressing key challenge 3: Leveraging personal and job resources to sustain late-career teachers' work engagement and learning

Drawing on the complementary findings of Studies 3 and 4, this research underscores the dynamic interplay between personal resources and job resources, including supportive leadership and collegial collaboration, in shaping late-career teachers' work engagement in professional learning. **Study 3**, through its quantitative profiling, revealed how different resource constellations can be, ranging from well-equipped to poorly equipped profiles, directly influence patterns of engagement. **Study 4**, through its in-depth qualitative interviews, added nuance by showing how LCT themselves narrate the interaction of these resources and demands, highlighting the relational and contextual nature of their experiences. Together, these findings resonate with the JD-R model (Bakker & Demerouti, 2007) and reinforce the idea that personal and job resources co-construct work engagement and learning trajectories (Xanthopoulou et al., 2007). Well-equipped profiles in Study 3 showed proactive learning strategies supported by enabling environments, while Study 4 illuminated how supportive colleagues and leadership buffered stress and fostered growth. These combined insights argue for moving beyond linear resource models towards more context-sensitive and relational understandings of how LCT mobilise or exhaust personal and institutional assets. This convergence of quantitative and qualitative insights argues for moving beyond linear resource models towards more context-sensitive and relational understandings of how LCTs mobilise or exhaust personal and institutional assets.

Equally importantly, both studies reveal that for LCT, professional learning is not simply about technical upskilling, but also about identity, meaning, and agency. Quantitative profiles from Study 3 indicated that teachers who actively engaged in learning were those who could align their personal values with supportive institutional practices, such as collaborative spaces and trust-based leadership. Qualitative insights from Study 4 reinforced this, showing how LCTs framed learning as a way to maintain a sense of purpose and contribution to collective knowledge in early childhood education. This perspective echoes Avalos (2011) and Kennedy (2016), who argue that professional learning should be understood not as a top-down compliance mechanism but as a relational and identity-sustaining practice. Leadership emerges as a critical enabler: by validating LCT' expertise and fostering spaces for dialogue, it transforms learning from an imposed duty to a co-constructed process of professional and personal renewal. This integrated understanding calls for professional development models that recognise late-career teachers not just as recipients of knowledge but as essential agents in the ongoing shaping of pedagogical cultures.

Moreover, the combined data from Studies 3 and 4 reveal the hidden costs that LCT face when managing demanding work environments. The qualitative interviews in **Study 4**

exposed how many teachers prioritise professional continuity over personal well-being, sometimes leading to extended sick leave and financial insecurity, an issue often overlooked in quantitative data alone (Inbar & Shiri, 2021). The profiling in **Study 3** deepened this by showing how less-equipped teachers, even when motivated, struggled to engage in meaningful learning due to cumulative strain and lack of institutional scaffolding. These findings challenge deficit-oriented narratives of late-career disengagement (Zhang et al., 2020), by emphasising the importance of context and relationships in withdrawal. They also call for anticipatory, health-sensitive practices that can sustain both professional identity and physical well-being, echoing Zhang et al.'s (2024) argument that sustained engagement requires reciprocal support structures rather than individualised resilience alone.

Additionally, these findings prompt a critical rethinking of how organisational support for LCT is understood and implemented. While many professional development programmes and policy frameworks promote the idea of continuous learning across the career span, they often adopt standardised or technocratic approaches that overlook the distinctive needs and aspirations of LCT (Darling-Hammond et al., 2017). The profiles in **Study 3** and the narratives in **Study 4** both suggest that LCT's work engagement depends not only on access to resources but also on the relevance and perceived authenticity of these resources in addressing their specific contexts. This perspective calls for reimagining professional development and workplace support as adaptive and relational practices rather than as mere provision. Leaders and policymakers must consider how to create spaces for LCT to shape the content and processes of learning, ensuring that these initiatives are grounded in trust, recognition, and professional agency. Such a shift would move beyond deficit narratives, where LCT are seen as passive recipients of training, towards a model of co-construction that values their accumulated expertise and ongoing contributions to educational practice.

4. Addressing key challenge 4: Designing and evaluating interventions to support late-career teachers

Study 5 confirms that targeted interventions can be effective in strengthening the personal resources of LCT, supporting earlier findings that resilience, self-efficacy, and other psychological capacities are pivotal in coping with high job demands (Xanthopoulou & Bakker, 2021). The observed gains in personal resources following the intervention align with previous meta-analyses showing positive links between personal resources and work engagement across professions (Crawford et al., 2010). Importantly, these findings address a gap identified by Jeon et al. (2017) and Randall et al. (2023), who argue that sector-specific interventions, particularly in early childhood education, remain scarce. By validating the impact of a tailored, resource-focused programme, this study underscores the importance of moving beyond generic professional development towards interventions that explicitly nurture the psychological strengths of LCT, fostering a renewed sense of agency and self-regulation.

A notable contribution of Study 5 lies in its identification of a delayed but significant effect of the intervention on teachers' well-being. While no immediate post-training improvement was observed, the follow-up data revealed significant well-being gains, suggesting that the integration of new coping strategies and personal resources requires a period of adaptation. This temporal pattern resonates with Fredrickson's broaden-and-build theory (2001), which posits that positive emotions and personal resources develop incrementally through repeated

cycles of learning and practice. It also aligns with the call by Guglielmi et al. (2015) for longitudinal research to understand how work engagement evolves and stabilises over time. Such findings highlight the need for patient, iterative evaluation frameworks in intervention design, moving away from short-term impact measures to embrace the complexity of behavioural and identity-based change processes in late career.

Importantly, these insights must also be understood within the specific context of ECE, where the relational and physical demands of the work environment, especially in a sector marked by gendered expectations and the overrepresentation of female staff, add an additional layer of complexity to late-career sustainability (Inbar & Shiri, 2021). The study's qualitative findings underscore that older teachers in ECE often face a dual expectation of being both highly adaptable and emotionally available, navigating physical strain and repetitive tasks while also maintaining a high level of relational engagement with children and families. This dimension of "double caregiving" intensifies the cumulative pressures they experience and reinforces the need for holistic, gender-sensitive interventions.

Furthermore, the findings of **Study 5** reinforce the argument that professional development for LCT should shift from a didactic focus to a holistic model that supports self-regulation and resource management (Baltes & Lang, 1997; Freund, 2008). While many professional learning opportunities still prioritise instructional techniques, our research points to the value of equipping LCT with strategies for emotional and cognitive self-regulation, skills that become particularly vital as physical demands and role complexity increase (Cheval et al., 2022; Idowu & Szameitat, 2023). Such an orientation aligns with findings from broader studies of older workers (Poscia et al., 2016), which demonstrate that health- and well-being-focused interventions tend to yield more sustainable outcomes.

Another significant insight comes from the analysis of transitions between different personal resource profiles during the intervention. Since the training was designed to strengthen personal resources, our initial hypothesis proposed that LCT would shift towards more favourable profiles following the intervention. Specifically, teachers initially classified in the "Poorly Equipped" profile were expected to transition to profiles characterised by stronger personal resources at T2. Conversely, LCT who were already well-equipped, were expected to remain in that profile but with higher scores for specific personal resources. To examine these transitions, two co-authors applied the same profile framework from **Study 3** to the intervention data, using Z-scores to classify teachers into four profiles, "Poorly Equipped," "Neutral Stance," "Resilient," and "Well-Equipped." A double-blinded coding process ensured objectivity, and a Cohen's kappa of 0.82 ($p \leq .001$, $n = 133$) demonstrated almost perfect inter-rater agreement (Landis & Koch, 1977). The results of these analyses are visually represented in Tables 20 and 21, showing the evolution of LCT' profiles at time 2 (post-test) and time 3 (follow-up), further illustrating the dynamic shifts in personal resource profiles over time.

This additional analysis reveals that personal resources of LCT are not static traits but dynamic and responsive to targeted support. It underscores the importance of moving beyond generic interventions, as these transitions illustrate that even small, tailored efforts can significantly influence how LCT perceive and leverage their capacities for self-regulation and professional engagement (Taris et al., 2017). Furthermore, building on arguments mentioned earlier in addressing key challenge 1, the existence of multiple profiles within the same professional cohort challenges assumptions of homogeneity in late-career teaching,

highlighting the need for differentiated support approaches that account for these diverse starting points and trajectories (Bakker & Demerouti, 2017).

Critically, these findings also invite a broader rethinking of how personal resources and work engagement are conceptualised in later career stages. Rather than treating these elements as fixed outcomes of long-term experience, they should be understood as relational and contextually situated, evolving through the interplay of structural supports and individual agency (Myin-Germeys et al., 2018; Ruiz-Zorrilla et al., 2020; Skinner & Pitzer, 2012). This perspective calls for a more nuanced view of professional sustainability in ECE, highlighting the dynamic interplay among job resources, job demands, personal growth, and systemic conditions (Cheval et al., 2022; Idowu & Szameitat, 2023). For example, the dynamic transitions between profiles can be seen as a microcosm of how late-career engagement itself is a negotiated process, shaped by shifting institutional demands and teachers' evolving aspirations (Granziera et al., 2021).

Finally, exploring how teachers adapt and reconfigure their personal resources in response to shifting expectations offers a more holistic understanding of what "career sustainability" and professional growth means in practice (Fang et al., 2025; Poscia et al., 2016). It extends beyond simple notions of retention or attrition to consider the lived, everyday practices through which late-career teachers navigate work demands, identity tensions, and evolving professional goals. Such an understanding reinforces the argument that interventions for LCT in ECE should not only focus on boosting resilience or self-efficacy in the abstract, but also on fostering supportive organisational cultures that validate teachers' contributions and enable them to reimagine their roles in ways that sustain both personal and collective well-being (Hargreaves & Elhawary, 2019).

Table 20. Means and standard deviations of profiles fluctuations after post-test

			Time 1 – Pretest					Time 2 – Post-test				
				SOC	OFTP	TSE	RAS		SOC	OFTP	TSE	RAS
T1 Profiles*	T2 Profiles*	Expected effect	N	M(SD)	M(SD)	M(SD)	M(SD)	N	M(SD)	M(SD)	M(SD)	M(SD)
1	1	0	10	3.2 (.44)	2.34 (.49)	3.37 (.55)	3.39 (.52)	3	3.5 (.22)	2.60 (.72)	3.28 (.25)	3.39 (.55)
	2	+						1	2.75	2.8	3.33	3.17
	3	+						1	3.08	3	4	4.25
	4	+						5	3.67 (.17)	3.12 (.83)	4.20 (.45)	4.08 (.49)
2	1	-	15	2.47 (.55)	1.59 (.54)	2.79 (.60)	3.67 (.51)	2	2.71 (.29)	2.9 (1.27)	3.92 (.59)	3.75 (.35)
	2	0						0	-	-	-	-
	3	+						4	2.56(1.00)	2.50(1.55)	3.71 (.34)	4.52 (.33)
	4	+						9	3.58 (.20)	3.49 (.50)	3.94 (.43)	4.10 (.55)
3	1	-	8	2.93 (.40)	2.20 (.81)	3.60 (.48)	4.27 (.50)	1	2.33	2	4.17	3.92
	2	-						0	-	-	-	-
	3	0						3	3.25 (.36)	3.25 (.70)	4.39 (.77)	4.61 (.34)
	4	+						4	3.79 (.45)	3.1 (1.42)	4.00(1.78)	3.77 (.23)
4	1	-	9	3.66 (.43)	2.82 (.93)	4.05 (.65)	3.96 (.68)	0	-	-	-	-
	2	-						0	-	-	-	-
	3	-						1	3.25	3.40	4	3.83
	4	+						8	3.86 (.55)	3.95 (.80)	4.33 (.57)	4.25 (.62)

* Profile 1: Low equipped; Profile 2: Neutral stance; Profile 3: Resilient; Profile 4: Well-equipped

Table 21. Means and standard deviations of profiles fluctuations after follow-up measurement

Time 2 - Post-Test								Time 3 – Follow up				
T2	T3	Expected effect	<i>N</i>	SOC M(SD)	OFTP M(SD)	TSE M(SD)	RAS M(SD)	<i>N</i>	SOC M(SD)	OFTP M(SD)	TSE M(SD)	RAS M(SD)
Profiles*	Profiles*											
1	1	0	3	3.5 (.22)	2.60 (.72)	3.28 (.25)	3.39 (.55)	3	3.5 (.22)	2.60 (.72)	3.28 (.25)	3.39 (.55)
	2	+	1	2.75	2.8	3.33	3.17	1	2.75	2.8	3.33	3.17
	3	+	1	3.08	3	4	4.25	1	3.08	3	4	4.25
	4	+	5	3.67 (.17)	3.12 (.83)	4.20 (.45)	4.08 (.49)	5	3.67 (.17)	3.12 (.83)	4.20 (.45)	4.08 (.49)
2	1	-	2	2.71 (.29)	2.9 (1.27)	3.92 (.59)	3.75 (.35)	2	2.71 (.29)	2.9 (1.27)	3.92 (.59)	3.75 (.35)
	2	0	0	-	-	-	-	0	-	-	-	-
	3	+	4	2.56(1.00)	2.50(1.55)	3.71 (.34)	4.52 (.33)	4	2.56(1.00)	2.50(1.55)	3.71 (.34)	4.52 (.33)
	4	+	9	3.58 (.20)	3.49 (.50)	3.94 (.43)	4.10 (.55)	9	3.58 (.20)	3.49 (.50)	3.94 (.43)	4.10 (.55)
3	1	-	1	2.33	2	4.17	3.92	1	2.33	2	4.17	3.92
	2	-	0	-	-	-	-	0	-	-	-	-
	3	0	3	3.25 (.36)	3.25 (.70)	4.39 (.77)	4.61 (.34)	3	3.25 (.36)	3.25 (.70)	4.39 (.77)	4.61 (.34)
	4	+	4	3.79 (.45)	3.1 (1.42)	4.00(1.78)	3.77 (.23)	4	3.79 (.45)	3.1 (1.42)	4.00(1.78)	3.77 (.23)
4	1	-	0	-	-	-	-	0	-	-	-	-
	2	-	0	-	-	-	-	0	-	-	-	-
	3	-	1	3.25	3.40	4	3.83	1	3.25	3.40	4	3.83
	4	+	8	3.86 (.55)	3.95 (.80)	4.33 (.57)	4.25 (.62)	8	3.86 (.55)	3.95 (.80)	4.33 (.57)	4.25 (.62)

* Profile 1: Low equipped; Profile 2: Neutral stance; Profile 3: Resilient; Profile 4: Well-equipped

Taken together, these four key challenges, characterising LCT, understanding their work engagement and well-being, leveraging their personal and job resources, and designing targeted interventions, highlight the complex and multifaceted nature of sustaining professional engagement in late-career teaching. Each challenge reveals interconnected tensions: definitional ambiguities and evolving identities, the negotiation of personal agency within demanding institutional contexts, and the role of supportive leadership and organisational trust. Table 22 synthesises these challenges, mapping how the five studies of this dissertation contribute to clarifying and extending current understandings of late-career teachers. In doing so, this overview offers a comprehensive yet nuanced framework that foregrounds the situated, relational, and dynamic dimensions of late-career professional learning.

In early childhood education, these findings are particularly salient, underscoring the relational, embodied, and context-bound challenges LCT face. Rather than treating these teachers as a uniform group, the evidence suggests that late-career engagement is an ongoing negotiation between personal aspirations, physical and emotional resources, and shifting institutional expectations. This research argues for a more differentiated, relationally oriented view of late-career teaching, one that recognises both the structural barriers and the agency of LCT as experienced and evolving professionals. Such perspective reframes late-career teaching not as a linear decline, but as a dynamic process of adaptation, identity reconfiguration, and ongoing professional contribution.

Table 22. Key challenges, summary of findings, and related contributions

Key challenges	Studies	Main findings	Theoretical contributions
1. Characterising LCT and their professional learning experiences	Study 1: Systematic Literature Review	Reveals definitional inconsistencies and fragmented conceptualisations	Clarifies the conceptual boundaries of “late-career teachers” by highlighting the need for relational, context-sensitive definitions rather than age- or tenure-based thresholds
2. Understanding Conditions influencing Late-Career Teachers’ Work Engagement and Professional Learning	Study 2: Qualitative Exploration of Learning Conditions	Highlights barriers and enablers to professional learning from LCT’ perspectives	Provides a relational and identity-sensitive lens, showing how professional learning emerges from the interplay between institutional demands and teachers’ evolving identities
3. Leveraging Personal and Job Resources to Sustain Late-Career Teachers’ Work Engagement and Learning	Study 3: Latent Profiles & Moderation Model; Study 4: LCT’ Experiences with Job Demands and Resources	Identifies distinct LCT profiles. Demonstrates interaction of personal and contextual resources	Extends the JD-R framework by showing how personal resources are dynamically reshaped through institutional supports and evolving relational contexts
4. Designing and Evaluating Interventions to Support LCT	Study 5: Intervention to Strengthen Personal Resources	Confirms effectiveness of a targeted intervention in enhancing personal resources, and its effect on work engagement, and well-being.	Reinforces the potential of tailored, agency-sensitive interventions to strengthen LCT’ personal resources and sustain work engagement in late career teaching

5. An integrative reflection on the JD-R model for late-career teachers

A particularly valuable contribution of this dissertation lies in its use of the Job Demands-Resources model as an analytical lens to understand how late-career teachers experience the intersection of work engagement, well-being, and professional learning. The JD-R model provided a structured approach to map the ways in which job demands and job resources dynamically shape teachers' capacity to adapt and thrive (Bakker & Demerouti, 2017). Building on the findings addressed in key challenge 3, this dissertation underscores how personal resources are not static traits but are shaped and reshaped through interactions with contextual supports and challenges (Xanthopoulou et al., 2007). For example, while well-equipped profiles leveraged institutional support and strategic resource management to maintain engagement, less-equipped teachers struggled to sustain their participation in learning activities, even when they possessed strong personal motivation. These findings resonate with Granziera et al. (2021), who argue that the same job demands can be perceived as motivating challenges or depleting stressors, depending on individual and relational contexts. Consequently, this study extends existing applications of the JD-R model by showing that personal resources themselves are dynamic and contingent on evolving institutional conditions and the broader socio-emotional climate of ECE. This perspective invites a more fluid and relational interpretation of the JD-R framework, one that moves beyond static typologies to consider how professional identities, relational trust, and institutional cultures mediate the balance between demands and resources in late-career teaching.

At the same time, this study also exposes some limitations in the JD-R model's capacity to fully capture the complexity of late-career experiences. Specifically, the framework's binary distinction between job demands and job resources does not sufficiently address how these categories may shift in meaning across career stages or institutional contexts (see also Granziera et al., 2021). For instance, certain administrative tasks or mentoring roles may be experienced by some LCT as energising opportunities for growth, while others perceive them as burdensome demands. This highlights the importance of considering the subjective and context-specific interpretations of workplace factors (Bakker & Demerouti, 2017). Moreover, as shown in the profiles identified in **Study 3**, personal resources such as resilience and self-efficacy are not fixed capacities but are themselves influenced by organisational cultures and relational dynamics, nuances that the linearity of the JD-R model may not fully capture. This critique resonates with calls for more dynamic, narrative-based approaches to understanding professional learning and identity work in late-career teaching (Kelchtermans, 2009). Ultimately, while the JD-R framework offers a robust analytical entry point, future research must expand beyond its binary categories to embrace the complexity and fluidity of late-career teaching, especially within the highly relational and emotionally demanding environments of early childhood education.

Moreover, it is essential to acknowledge that the operationalisation of the JD-R framework in this dissertation involved certain simplifications that do not fully reflect the rich diversity of personal resources highlighted in recent research. While the original model foregrounds core constructs like self-efficacy and resilience, more recent work has identified a broader and evolving landscape of personal resources in the workplace. For instance, do Carmo Fernandes and Martin (2023) emphasise optimism and organisational self-esteem as critical

to engagement, while Hardaningtyas (2020) and Msangi et al. (2024) highlight similar resources in relation to LCT' capacity for sustained motivation. Van Zyl et al. (2023) have even proposed grit, defined as perseverance and passion for long-term goals (Duckworth et al., 2007), as a promising personal resource that warrants attention. Other studies, like those by Alaydi et al. (2024), identify additional resources such as mindfulness, coping strategies, self-care for good health, work value orientation, and self-esteem as factors that may significantly shape how teachers experience engagement and well-being. This suggests that future applications of the JD-R framework in ECE should consider these emerging constructs and their complex interplay with job resources and demands. In particular, emotional competences (Lorente et al., 2014; Tripathi et al., 2021), psychological flexibility (Tripathi et al., 2021), and self-compassion (Lilius et al., 2008; Willems et al., 2021) have been identified as promising personal resources that could further nuance our understanding of sustained engagement in demanding educational contexts.

Furthermore, Carmona-Halty et al. (2021) show that personal resources often function as mediators or moderators in the JD-R model, shaping how job demands and resources ultimately translate into outcomes such as engagement, motivation, or burnout. Integrating these additional layers, as seen in the systematic reviews by Alaydi et al. (2024), could also connect with other theoretical frameworks, such as the Five-Factor Model of personality to tailor support to teachers' dispositions and evolving needs (e.g., Fukuzaki & Iwata, 2024). Taken together, these insights argue for a more holistic and context-sensitive interpretation of the JD-R model that better reflects the dynamic, situated, and relational processes through which late-career teachers navigate professional learning, engagement, and well-being. Taken together, these insights highlight that while the JD-R model remains a valuable foundation for exploring the professional sustainability of LCT, its future development in ECE contexts should move towards more integrative and differentiated approaches. Such approaches would consider not only job demands and resources in isolation, but also the evolving, situated, and relational nature of personal resources as teachers adapt, grow, and contribute across their late-career trajectories.

Chapter 10

Limitations and implications for future research and practice

Limitations and implications for future research and practice

This chapter is guided by two interrelated principles: transparency and epistemic responsibility. Rather than treating limitations as incidental or merely technical, this section frames them as integral to the knowledge production process, aligning with recent calls for greater rigour in how scholarly weaknesses are communicated (Clarks et al., 2024; Corneille et al., 2023). As Jalongo and Saracho (2016) remind us, no single study is flawless or definitive; acknowledging and articulating limitations is a contribution to transparent dialogue and cumulative knowledge building. This reflection on the internal and external validity of the five empirical studies is further informed by the notion of situated knowledges (Haraway, 1988), which emphasises that all research is produced from particular standpoints, shaped by social, material, and institutional contexts. In the context of this dissertation, our own positionality, shaped by gender, age, professional background, and institutional setting, has influenced what was investigated, what was disclosed, and how findings were interpreted. Making this explicit fosters a more reflexive and honest account of both the strengths and limitations of the research. Finally, in addition to critically assessing these limitations, this section identifies avenues for future research. Building on the empirical findings of the five studies, these suggestions respond to broader theoretical and methodological questions raised throughout the dissertation, inviting further exploration of how late-career professional learning unfolds in diverse institutional and cultural contexts.

1. Situated knowledge and research positionality: implications for internal validity

In alignment with Donna Haraway's (1988) theory of *situated knowledges*, this research adopts the position that knowledge is never produced from a neutral or disembodied standpoint. Instead, all observation and interpretation are historically, socially, and materially embedded. Haraway's critique of the "view from nowhere" challenges conventional notions of objectivity and calls for epistemic accountability on the part of researchers. As Lang (2011) and Fosket (2015) further argue, human perspectives are necessarily embodied and multiply situated, geographically, socially, politically, and affectively. From this perspective, the identity, status, and institutional affiliations of the researcher are not incidental, but actively shape the knowledge that is constructed. In the present dissertation, attention is paid to how the researcher's social position, as a white, middle-class, heterosexual man in his thirties, a father, and a former early childhood education teacher working in a Catholic, potentially Eurocentric academic institution, may have influenced both the process of data collection and the interpretation of findings. The asymmetries between researcher and participants, particularly in terms of gender, age, and career stage, form part of the epistemic landscape of the research and merit critical attention when considering its internal validity.

This situated epistemology foregrounds the inherently relational nature of qualitative inquiry. Participants are not conceived as passive subjects, but as active meaning-makers whose disclosures are shaped by their perception of the research encounters. It is therefore necessary

to acknowledge that certain themes, such as the experience of menopause or reflections on institutional hierarchies, may have remained underexplored. Although participants also expressed views on the broader meaning behind the mission of early childhood education, as well as on shifts in contemporary society, these topics, discussed in Study 2, did not constitute the dominant themes raised during data collection. The absence or marginality of these issues in the data corpus does not necessarily indicate their irrelevance; rather, it may reflect processes of selective disclosure, shaped by perceptions of the researcher's identity and by broader socio-cultural norms surrounding what is sayable. For instance, the highly individualised nature of menopausal symptoms and experiences presents challenges in the workplace, particularly given the reluctance to disclose menopause to management due to fears of being judged as less competent, the persistence of gendered ageism, negative emotional responses such as embarrassment, and a personal desire for privacy (Atkinson et al., 2021). As Cau-Bareille (2021) has shown, the professional impact of menopause remains a sensitive and under-recognised topic in workplace research, particularly within feminised sectors such as ECE. This absence, observed across all five studies, raises legitimate questions regarding the scope and boundaries of the data and invites a cautious reading of the findings, especially in relation to gendered or embodied dimensions of professional engagement.

Beyond thematic silences, additional factors must be considered in relation to the consistency and robustness of the data. The number and distribution of participants across the five studies varied considerably, with some key profiles, particularly in **Study 4**, represented by only four or five individuals. This raises questions concerning theoretical saturation, a core principle of qualitative validity. While the overall corpus provided a diverse and information-rich basis for interpretation, the partiality of the knowledge produced must be acknowledged (Malterud et al., 2016). The internal validity of the findings is strengthened by efforts to establish coherence between research questions, methodological tools, and analytical processes, yet remains constrained by the limits inherent in situated, small-scale qualitative inquiry (Tracy, 2010). In this context, internal validity is understood not as the elimination of bias, but as a reflexive attentiveness to the organisational and relational conditions that shape data production, and a commitment to transparency regarding the scope and limits of interpretation.

Another aspect that warrants consideration in evaluating the internal validity of this dissertation relates to the criteria of inclusion employed across the five studies. Participants were typically selected based on chronological age and years of experience, which, while consistent with common definitions of "late-career," may inadvertently reinforce narrow or rigid conceptions of career stage. As recent work in other social science domains suggests, alternative measures of "age" or "late career" status, such as subjective perceptions of professional maturity, career phase self-identification, or role transitions, can offer a more nuanced and context-sensitive understanding of professional trajectories (Nagy et al., 2019). These alternative measures underscore that "late career" is not a strictly chronological category but one that is co-constructed through personal narratives and institutional contexts. In this dissertation, while the operationalisation of "late career" ensured a certain homogeneity in participant profiles, it also risked overlooking those who, for reasons of career change, cultural variation, or self-concept, do not fit neatly into this chronological definition. Recognising this limitation invites further reflection on how future research might

expand or diversify its sampling frameworks to better capture the dynamic and subjective dimensions of late-career teaching.

2. Reflections on external validity in a mixed-methods design

External validity refers to the extent to which findings can be generalised beyond the specific contexts in which the research was conducted. While internal validity ensures that results are credible within the parameters of a given study, external validity concerns their applicability to broader populations, institutional settings, or temporal frames. In educational research, both forms of validity are considered essential for ensuring scientific quality and relevance (De Ketele & Maroy, 2006). In this dissertation, external validity is addressed through both a critical examination of sampling procedures as well as a reflection on the interpretative boundaries of the findings.

In several of the studies presented in this dissertation, sampling strategies raise important concerns regarding the generalisability of the findings. As noted by Rahi (2017) and Shorten and Moorley (2014), sampling plays a critical role in shaping the quality of empirical research, particularly in terms of ensuring representativeness and supporting meaningful generalisation. In the present work, convenience sampling was employed in most cases, with participants largely self-selected, particularly in the intervention study. While this method enabled access to a diverse and engaged cohort of teachers, it also increases the risk of selection bias. Participants who opted into the study may have already demonstrated greater openness to change or benefitted from stronger contextual support and personal resources. As Alvi (2016) notes, target populations are rarely homogeneous and are composed of multiple, internally diverse subgroups that cannot be assumed to be representative of one another. Similarly, Acharya et al. (2013) caution against extrapolating findings from convenience samples, as their structure inherently limits the possibility of statistical generalisation. Although the demographic makeup of the sample broadly mirrors the gender distribution in the ECE workforce, approximately 90% female (Brophy-Herb, 2023; Thorpe et al., 2020), the almost complete gender homogeneity of the participants restricts the applicability of results to male late-career teachers. Furthermore, self-selection not only shaped participation in the intervention, but also in the interviews, potentially excluding the perspectives of those less inclined or less equipped to engage in professional reflection.

Moreover, the exceptional conditions under which Study 3 was conducted also merit consideration. The onset of the COVID-19 pandemic significantly disrupted the initial research design, requiring reorganisation of study components and timelines. Participant recruitment coincided with the reopening of schools and heightened health concerns, which may have discouraged more vulnerable teachers, particularly those with health risks, from engaging in interviews or other in-person interactions. In addition, some participants encountered technical or communication barriers linked to remote data collection formats, a difficulty also reported by Kwon et al. (2022). As Eadie et al. (2021) and Katsarou et al. (2023) highlight, early childhood educators during this period were managing not only increased professional responsibilities but also heightened personal and emotional strain. These contextual factors likely shaped the nature of participation and, by extension, the data gathered. For example, the predominance of participants with fewer personal resources in Study 3 (Chapter 4) may partially reflect the acute stress and uncertainty of the period rather

than stable features of the target population. As such, the interpretation of these findings requires caution and must be situated within the extraordinary socio-emotional climate of the pandemic.

Furthermore, external validity is also shaped by both the temporal frame of outcome measurement and the methodological architecture of the studies. In the present dissertation, most findings were drawn from short- to medium-term observations. This is a known limitation in studies addressing variables such as work engagement and well-being, which often unfold over extended periods and are best understood as evolving trajectories rather than discrete, measurable endpoints (Sonnentag, 2015). As Mäkikangas et al. (2016) demonstrate in their longitudinal review, employee well-being and work engagement, tends to fluctuate over time, with relatively low stability in mean levels. These findings support the view that engagement is a dynamic construct, and that capturing its development requires temporal sensitivity in research design. The timing of data collection should be aligned with the nature of the phenomenon under study; capturing fluctuations in engagement or professional vitality requires longitudinal approaches capable of detecting subtle changes over time. As Timmons and Preacher (2015) demonstrate, the temporal design of a study, particularly the spacing and frequency of measurements, can significantly influence the accuracy and interpretive validity of longitudinal estimates. Without such alignment, the robustness of claims regarding long-term intervention efficacy remains constrained, as key dynamics may be either missed or misrepresented.

To address these complexities, the dissertation adopted a mixed methods approach, combining qualitative and quantitative strands to generate a more multidimensional perspective on the research problem. The integration of thematic analysis, pre/post assessments, and sequential or parallel-phase designs enriched both the depth and breadth of interpretation. However, this methodological heterogeneity also raises questions about generalisability across studies. Within the qualitative components of this dissertation, generalisability is not approached in statistical-probabilistic terms but rather in relation to the transferability, fittingness, and analytic depth of the findings. As Stake (2013) and Lincoln and Guba (1985) argue, naturalistic generalisability relies on the reader's ability to relate study findings to their own experiences or professional contexts, a process enabled by thick description and contextual transparency. In this sense, the qualitative studies in this dissertation seek not to produce universally applicable claims, but to generate insights that are richly situated and analytically illuminating. Inferential generalisability (Lewis et al., 2014) is supported through detailed reporting of participant profiles, institutional settings, and methodological decisions, allowing readers to assess whether findings may be meaningfully transposed to other contexts. In addition, some findings are linked to broader theoretical constructs, such as job demands and resources, or professional learning, thus participating in what Polit and Beck (2010) describe as analytic generalisability, which extends the interpretive reach of context-specific data through its theoretical integration.

In contrast, the quantitative components of the dissertation, particularly those based on convenience sampling and short-term outcome measures, do not permit statistical generalisability to a broader population, particularly outside of the French-speaking part of Belgium. As several authors have noted (Carminati, 2018), the positivist assumptions underpinning statistical generalisability are not appropriate for studies focused on complex, context-dependent human behaviours. Constructs such as engagement, motivation, and

professional identity are not fixed traits but are embedded in relationships, power dynamics, and evolving institutional conditions. Moreover, probabilistic generalisation is inherently limited by sampling error, contextual variability, and interpretive complexity (Polit & Beck, 2010). These limitations are acknowledged explicitly in this dissertation, and findings are presented not as universally representative, but as situated contributions to understanding how specific professional development interventions are experienced by a particular cohort under particular conditions. Additionally, as Coppe et al. (2025) argue, even randomised controlled trials, often seen as the ‘gold standard’ in evidence-based research, may have a questionable epistemic status in educational contexts. Their focus on controlled causality can overlook the relational, contextual, and evolving nature of teaching and learning, potentially limiting their external validity and their capacity to capture the situated realities of teachers’ experiences.

Beyond these methodological and contextual considerations, another layer of limitation emerges from the very nature of the intervention implemented in **Study 5**. Multi-component positive psychology interventions (MPPIs), such as the one implemented in this dissertation, combine several strategies (e.g., reflection on strengths and mindfulness practices) that may interact in complex and context-specific ways (Hendriks et al., 2020). While such designs offer a holistic approach to fostering well-being and engagement, they introduce challenges in isolating the contribution of each component and in determining their synergistic or potentially competing effects (Tejada-Gallardo et al., 2020). Moreover, the complexity of MPPIs requires a high level of participant engagement and fidelity to the intervention, which may vary across contexts and influence the observed outcomes (Hendriks et al., 2020).

These challenges highlight that, in addition to issues of sampling and context, the multi-component structure of the intervention itself limits straightforward attribution of outcomes to specific activities. Accordingly, the findings presented here should be understood as situated contributions to the literature on professional learning, engagement and, well-being in education, shaped by the interplay of intervention content, participant agency, and the particular institutional and cultural context in which the study took place.

Overall, to address these complexities and ensure a more robust exploration of the research problem, this dissertation employed a sequential-phase mixed methods design. In this design, the findings from one research phase informed the development of subsequent phases. Typically, such a design begins with either a qualitative or quantitative inquiry, whose results guide the focus, sampling, or instruments of the next stage (Ponce & Pagán-Maldonado, 2014). This iterative structure enables a more responsive and integrated exploration of the research problem, enhancing coherence between empirical observations and theoretical interpretation. Taken together, this layered approach supports a more expansive and context-sensitive understanding of generalisability. While it does not allow for population-wide inference, it enables cross-validation of findings, theoretical elaboration, and transferability grounded in the depth and richness of the data. It also aligns with Maxwell’s (1992) notion of external validity in qualitative research, one that values ecological credibility, interpretive nuance, and temporal complexity. The aim here is not to produce definitive answers, but to construct an empirically grounded, analytically meaningful account of late-career teachers’ experiences in early childhood education, an account that may inform reflection and action in other educational settings, while acknowledging the singularities of the context in which it was produced.

3. Future research perspectives

Building on the limitations and contextual factors outlined in this dissertation, several future research avenues emerge to deepen our understanding of LCT's professional experiences and sustained work engagement. First, addressing the gaps in thematic coverage, such as the relative silence around issues like menopause or reflections on institutional hierarchies, suggests the need for studies explicitly designed to surface gendered and embodied dimensions of late-career work. Recent research by Converso et al. (2024) highlights how menopausal symptoms can significantly impact work engagement, leading to increased emotional exhaustion and intentions to leave the profession. Similarly, Cronin et al. (2024) found that around 10% of menopausal women resign due to their symptoms, with 19% reducing their working hours. These findings underscore the importance of creating supportive work environments that acknowledge and address the unique experiences of menopausal teachers.

Second, the notion of devotion emerged as a powerful yet underexplored theme in participants' narratives, raising questions about how personal dedication interacts with evolving job demands and relational dynamics. Ma (2023) demonstrated that teachers' intrinsic motivation and sense of vocation are closely linked to their work engagement and well-being. Furthermore, Aulia et al. (2025) identified that resilience and job stress significantly influence job satisfaction among teachers, suggesting that personal dedication plays a crucial role in sustaining engagement over time. Future qualitative inquiries could explore how teachers' sense of vocation shapes their resilience, work engagement, and well-being at different career stages. Such studies would benefit from more diverse samples, extending beyond early childhood education to encompass teachers across varied institutional and geographical contexts.

Third, addressing the limitations of small, convenience-based samples requires larger-scale studies with stratified or purposive sampling to ensure broader representation and to reduce selection bias. Such sampling strategies would help capture the heterogeneity of LCT's experiences, including those who may be underrepresented in smaller-scale studies due to barriers like workload, institutional constraints, or personal hesitations (see Korthagen, 2017). Furthermore, incorporating a growth model approach (Mäkikangas et al., 2016) in longitudinal studies could illuminate how engagement fluctuates or evolves over time, offering a dynamic, life-span perspective that better captures the fluidity of professional identities and aspirations. For instance, recent longitudinal research by Li and Zhang (2025) on second-career teachers highlights how professional identity evolves in response to contextual factors and personal resources, suggesting similar dynamics are likely present among LCT, underscoring the need for nuanced, long-term analyses of teachers' development. Beyond tracking these developmental trajectories, longitudinal research would also support a more nuanced understanding of how personal resources (e.g., resilience, self-efficacy) and contextual factors (e.g., leadership styles, organisational climates) interact to sustain or challenge work engagement in the late career. Such comprehensive, carefully designed studies focusing explicitly on LCT would contribute to refining theories of teacher development and to crafting interventions that are sensitive to the complex, evolving experiences of teachers in the final stages of their careers.

Fourth, further attention should also be paid to the specific characteristics of Study 5. Future research should explore how the distinct elements of MPPI (e.g., reflection on strengths,

mindfulness) specifically interact with the unique needs and experiences of LCT in varied institutional and cultural contexts. Disentangling the relative contributions and potential synergies of these components would provide valuable insights into how such interventions can best support LCT' well-being and sustained work engagement in the later stages of their careers. Moreover, examining how participant engagement and fidelity to the MPPI vary among LCT, and how these factors influence outcomes, could identify barriers and facilitators that are particularly salient for this cohort (Hendriks et al., 2020). Given the quasi-experimental design employed here, future studies should also prioritize randomized controlled trials or similarly rigorous experimental designs to strengthen causal inference and better control for confounding factors (Beames et al., 2023). Finally, extending MPPI research to diverse cultural and institutional settings would support more nuanced understandings of how such interventions align with participants' lived experiences, values, and professional contexts, fostering both theoretical development and practical relevance (Lomas et al., 2021).

Fifth, beyond these targeted explorations, future intervention studies should consider broadening their scope while remaining attentive to the specific needs of LCT. While this dissertation focused on LCT, similar self-reflective and resource-focused interventions could be adapted and tested with early- and mid-career teachers, recognising that identity work and preventive resource-building are relevant across the teaching lifespan. In particular, a promising line of inquiry involves interventions at the school level, co-designed with leadership teams. Such initiatives could include the creation of informal spaces for dialogue and collective reflection, practices shown to foster relational trust and professional engagement (de Lange et al., 2024; Gaudreau et al., 2021). These collaborative interventions could not only address the challenges faced by LCT, but also enhance the cohesion, adaptability, and collective efficacy of teaching staff as a whole, contributing to healthier and more sustainable professional communities.

Finally, larger-scale and more holistic studies could chart the evolution of career trajectories over multiple decades. Revisiting classic typologies such as Huberman's (1989) in light of shifting career timelines and policy changes, for example extended retirement ages, could yield new insights into how teachers' experiences have transformed. Such work would require careful attention to context-specific nuances, acknowledging how institutional structures, socio-cultural expectations, and generational shifts impact teachers' pathways. This expansive perspective also invites a closer examination of the personal resources identified in Study 4, resilience, self-efficacy, SOC Strategies, and OFTP, while integrating broader constructs (e.g., grit, mindfulness) that have gained prominence in recent literature (see Chae & Kim, 2024; Hidajat et al., 2023). Such a project would likely demand an interdisciplinary team and a commitment to theoretical saturation across teacher cohorts, ensuring that findings do not overgeneralise but instead respect the complexity of late-career experiences in diverse teaching contexts.

Looking further ahead, an international comparative dimension would provide valuable insights into how policy frameworks, cultural attitudes, and demographic shifts shape late-career teaching across different countries. For example, Italy, among the top three countries with an aging teaching workforce (Eurostat, 2024), offers a salient context for comparison. Such a study could extend the lens of this dissertation, situating findings within a broader European or global perspective. By integrating collaborative research methodologies and

fostering transnational partnerships, such an inquiry could generate actionable insights that inform both local practices and global conversations on sustaining vibrant, healthy teaching communities.

Table 23. Limitations and Future Research Directions

Limitations	Future research directions
Thematic gaps: Underexplored topics like menopause, institutional hierarchies, and the nuanced role of personal devotion in LCT engagement	- Design studies that explicitly surface gendered, embodied, and cultural dimensions (e.g., menopause, ageism) - Investigate the theme of devotion and its link to motivation, well-being, and relational dynamics across career stages
Limited sample size and convenience sampling: Small, self-selected groups that may not represent broader LCT populations	- Conduct larger-scale studies with stratified or purposive sampling to reduce selection bias and improve representativeness - Apply growth model approaches (Mäkikangas et al., 2016) in longitudinal studies to map the evolution of work engagement trajectories - Draw on longitudinal research on professional identity (e.g., Li & Zhang, 2025) to inform the design of future studies on LCT engagement
Focus on LCT: Intervention scope limited to late-career teachers, with minimal testing on other career stages	- Test similar self-reflective and resource-building interventions with early- and mid-career teachers to explore cross-career relevance and generalisability - Explore how resource development evolve across career stages
Intervention-level limitations: Study 5's MPPI examined in only one institutional and cultural setting	- Examine how distinct MPPI components interact with each other and with broader institutional/cultural contexts in LCT interventions - Disentangle the relative contributions and synergies of these components for LCT-specific support (Hendriks et al., 2020; Lomas et al., 2021) - Explore how participant engagement and fidelity vary among LCT and affect outcomes - Prioritise the use of RCTs or similar designs (Beames et al., 2023) to strengthen causal inference, while acknowledging the critiques of RCT epistemology in education (Coppe et al., 2025)
Short- to medium-term observations: Lack of longitudinal data to track sustained impacts of interventions or broader career trajectories	- Design multi-decade, holistic studies of career evolution, including revisiting Huberman's (1989) typologies to account for extended retirement ages and evolving career timelines - Integrate personal resources (e.g., grit, mindfulness, as discussed by Chae & Kim, 2024; Hidajat et al., 2023) to enrich understanding of LCT professional experiences
Context-specific insights: Findings may not be directly generalisable beyond the studied early childhood education contexts	- Incorporate international comparative research (e.g., Italy as a case with a rapidly aging teaching workforce) - Explore cross-cultural differences and similarities in how LCT trajectories are shaped by policy, cultural norms, and institutional contexts - Foster transnational collaborations to enhance policy relevance and support global conversations
School-level opportunities: Collaborative interventions not fully explored	- Investigate school-level, co-designed interventions (e.g., creating informal spaces for dialogue and collective reflection, fostering relational trust and engagement as shown by de Lange et al., 2024; Gaudreau et al., 2021) - Examine how these interventions could enhance cohesion, adaptability, and collective efficacy, addressing both LCT-specific needs and broader staff dynamics

4. Further epistemological and methodological reflections

The reflections on positionality outlined earlier open the door to a broader epistemological and methodological reconsideration of future research in education. In line with Donna Haraway's (1988, 1997) theory of situated knowledges, it becomes necessary to interrogate the epistemic frameworks that continue to shape dominant research paradigms, particularly those that reflect Eurocentric, masculine, and universalising traditions. Rather than striving for disembodied, totalising objectivity, situated epistemologies advocate for knowledge that is partial, contextual, and relational. This has direct implications for the design of future studies on teacher learning and professional engagement. Research should aim not only to include a wider diversity of voices, particularly those facing contextual or symbolic barriers to participation, but also to question the very terms under which participation is made possible. Including participants with reduced access to institutional support, fewer recognised credentials, or more precarious employment conditions may help assess whether the same interventions hold meaning and value across more heterogeneous professional realities. Doing so also calls for a re-evaluation of the researcher-practitioner hierarchy that often underlies traditional research frameworks, inviting more co-constructed and democratised modes of inquiry.

This epistemic shift encourages the adoption of methodological approaches that foreground experience, narrative, and embeddedness. In particular, future research could benefit from engaging with approaches such as Narrative Productions Methodologies (NPM), which explicitly build on Haraway's insights by operationalising the idea of "partial connections" between researchers and participants (Montenegro et al., 2023). Unlike positivist paradigms that assume objectivity, or purely discursive paradigms that treat knowledge as detached from the researcher, NPM recognises that knowledge always emerges through relational and contextual interactions. This means not only acknowledging but embracing the partiality of one's perspective and seeking knowledge in the very space of tension between differing situated experiences. In this light, the methodological process itself, how narratives are shared, interpreted, and returned, becomes a space of knowledge production (Smith et al., 2023). By creating conditions for these partial yet meaningful connections, researchers can open up new interpretive frameworks that better reflect the complex and relational nature of educational realities. In future studies, such approaches may also enable a more ethically engaged and politically conscious practice, where knowledge is not simply extracted, but co-produced and re-situated.

Building on the empirical findings and epistemological stance of this dissertation, three key dimensions emerge as priority areas for future investigation: (1) the constitution and anchoring of research teams, (2) the approach to fieldwork and data collection, and (3) the modalities of research dissemination and restitution. First, diversifying research teams in terms of gender, age, professional background, and institutional location may serve not only to enhance epistemic pluralism but also to reduce blind spots that emerge from homogenous perspectives. Second, in designing fieldwork, greater attention must be paid to how data collection tools and settings enable or constrain expressions of professional experience, particularly for individuals whose perspectives are underrepresented, as highlighted by the findings in Study 1. This includes reflecting on power dynamics, language, and cultural norms, and designing tools that invite rather than impose meaning. Finally, future research should invest in rethinking dissemination: how findings are returned to participants and

educational communities, and how those returns might generate new insights. Dissemination is not an afterthought, but a constitutive moment of situated knowledge production one that requires as much care and reflexivity as the initial phases of inquiry.

4.1 Reimagining research teams: Hybrid collaboration, practitioner engagement, and situated knowledge production

Building on the positionality considerations outlined in the previous paragraphs, it becomes essential to reconsider the composition of research teams as both an epistemological and political matter. Diversifying teams in terms of gender, age, professional background, institutional affiliation, and geographical location is not merely about representation, it is a means of broadening the interpretative framework and mitigating the epistemic blind spots that often emerge from homogeneous perspectives. Such diversity invites a plurality of understandings and fosters more nuanced interpretations of professional realities in education. Furthermore, this perspective calls for a revaluation of practitioner knowledge by involving teachers and other educational actors as co-researchers. Hybrid research teams that combine academic rigour with lived expertise hold the potential to produce more situated and socially relevant knowledge. In this sense, long-term collaborations with practitioners, teachers, school leaders, educational advisors or teacher trainers, should not be seen as secondary or logistical aspects of field access, but rather as fundamental to the production of meaningful inquiry (Vanderlinde & Van Braak, 2010). Working *with*, rather than *on*, participants entails a shift towards participatory and critically engaged methodologies that centre collaboration, mutual recognition, and reflexivity. This orientation invites us to rethink not only *who* conducts research, but also *how* and *for whom* it is done.

In parallel, this approach invites deeper reflection on the institutional anchoring of educational research. Working across disciplinary boundaries and institutional silos, and building sustained bridges between research, teacher education, and practice, can enhance the relevance and impact of educational inquiry (Bakker & van der Linden, 2020; Cochran-Smith & Lytle, 2009). One particularly promising structure for realising this vision is the *Research-Practice Partnership* (RPP). Defined by Farrell et al. (2021) as long-term, collaborative arrangements between researchers and practitioners, RPPs aim to co-address persistent problems of practice through shared inquiry, iterative cycles of learning, and joint responsibility for applying research in context. These partnerships move away from extractive models of data collection and towards mutual engagement, trust, and shared ownership of both process and outcomes (Coburn & Penuel, 2016; Penuel & Gallagher, 2017). In doing so, RPPs contribute not only to generating context-sensitive knowledge, but also to building professional and institutional capacity for change. Structures such as collaborative labs or practitioner-led seminars operate in similar ways and demonstrate how integrated models of inquiry can reframe the relationship between academia and the field. By institutionalising such practices, research becomes more embedded, responsive, and capable of accompanying long-term educational transformation.

The next step in this trajectory involves the active engagement of participants as co-constructors and co-facilitators of professional development and research. For example, as demonstrated in Study 5, teacher-led training sessions can be co-designed in ways that not only promote professional learning, but also allow LCT to articulate practice-based concerns

and co-develop solutions. This collaborative approach strengthens relevance and ownership, ensuring that professional development is not imposed from external structures but emerges organically from within the profession. These processes resonate with the notion of a *third space* (Beck, 2020), understood as a hybrid arena where practitioner and academic knowledge intersect and are equally valued (Cochran-Smith & Lytle, 2009; Zeichner, 2010). Such spaces, dialogic workshops, inquiry groups, or co-design seminars, provide fertile ground for joint theorising, critical reflection, and the emergence of new, field-grounded research questions. Teachers might explore themes such as emotional labour in ECE, strategies for sustaining motivation in under-resourced settings, or peer-led mentoring models for late-career professionals (Edwards-Groves et al., 2018). In this way, third-space environments not only support professional renewal but reposition practitioners as co-authors of knowledge and reform, thereby bridging the boundaries between inquiry, development, and practice.

4.2 Rethinking data collection with LCT

Engaging LCT in research revealed not only logistical challenges but also crucial insights about their unique relationship to inquiry and professional development (Day & Gu, 2010; O'Connor, 2008). While many LCT showed strong motivation to participate, often driven by a need to share experiences and highlight evolving challenges, this willingness was closely tied to the relational and contextual sensitivities of the research approach (Korthagen, 2017). Such motivation was particularly evident in their desire to voice concerns about deteriorating working conditions and shifting societal views of early childhood education (Ballet et al., 2006; Vandenbroeck et al., 2009). These findings underscore that LCT are not merely participants to be recruited; they are co-constructors of knowledge whose engagement depends on trust, flexibility, and recognition of their professional dignity (Negrin et al., 2022).

Traditional protocols often fail to capture the complexity of late-career experiences, especially when compounded by caregiving responsibilities or scepticism towards research seen as detached from real practice. In this dissertation, adapting recruitment and data collection strategies, offering phone interviews, home visits, or alternative formats, was essential to support LCT agency and accommodate their personal and professional commitments (Irvine, 2011; Seitz, 2016). Such flexibility also acknowledged the generational and relational dynamics that shape their willingness to participate (Forsat et al., 2020). Beyond logistics, these adjustments revealed how word-of-mouth within closely connected school communities can become a powerful enabler of participation, amplifying the representativeness and authenticity of data (Ballet et al., 2006; Korthagen, 2017).

Study 5 further underscored that LCT engagement is shaped by the relational and cultural fabric of their workplaces. Group homogeneity in career stage fostered solidarity and collective reflection, which participants valued as personally validating and pedagogically potent (Banfield et al., 2022; Schaubman et al., 2011). Creating psychologically safe learning spaces that recognised their expertise and evolving needs was essential to sustaining their motivation and enhancing the relevance of training content (Tonhäuser & Büker, 2016). Tailored pedagogical strategies, like behaviour modelling, group tasks, and personal goal-setting (Cannon-Bowers et al., 1995; Seidel, 2012; Taylor et al., 2005), further strengthened this climate of respect and agency.

Crucially, these findings challenge conventional notions of LCT as passive recipients of training or as subjects of study. Instead, they highlight the importance of relational ethics and shared ownership in research design and professional development. Doing research with LCT means engaging with their ambivalences and aspirations while acknowledging how systemic factors shape their experiences and forms of expertise. Overall, this work suggests that to support LCT well-being and engagement, research and training must be grounded in an ethic of respect, flexibility, and contextual sensitivity. Such an approach is not merely methodologically sound; it is also a professional and political responsibility, recognising LCT as essential partners in sustaining vibrant educational communities.

4.3 Dissemination and restitution of research findings

Building on the commitment to co-constructing knowledge with practitioners, this dissertation highlighted how dissemination is not simply a final step, but a relational and iterative process (Vanderlinde & Van Braak, 2010). Many LCT expressed that they valued not merely receiving findings but participating in collective discussions where their lived experiences were recognised (Korthagen, 2017). This was particularly evident during follow-up interviews, where participants spontaneously revisited earlier themes, suggesting that dissemination is most meaningful when it affirms their expertise and identity. Rather than favouring top-down transmission, LCT expressed a preference for shared interpretation, spaces where findings could be nuanced, situated within their contexts, and expanded into new questions (Banfield et al., 2022).

Nevertheless, this process was not without challenges. Several LCTs described constraints that limited their engagement with findings: lack of time, competing institutional demands, and a perception that research outputs rarely translated into tangible changes in practice (Ballet et al., 2006; Day & Gu, 2010). While these insights mirror broader critiques of the research-practice divide (Vanderlinde & Van Braak, 2010), they also suggest that for LCT, dissemination is inseparable from questions of professional agency and recognition (Schaubman et al., 2011). Co-facilitated restitution workshops, informal peer dialogues, and even targeted dissemination materials, such as concise video capsules or visual summaries, emerged as promising strategies to address these challenges (Navarrete et al., 2025; Rahman et al., 2020). These formats, grounded in shared ownership and practical relevance, were seen as more likely to foster genuine uptake.

Equally important, the findings highlight that dissemination efforts must be sensitive to the relational dynamics within schools. In contexts where LCT already felt marginalised, by ageist assumptions, generational conflict, or shifting institutional priorities, creating safe and respectful spaces for dialogue was critical (Forsat et al., 2020; Seitz, 2016). Here, the role of intermediaries, such as pedagogical advisers or professional development leads (e.g., Metzger et al., 2024; Vanblaere & Devos, 2016;), extends beyond simply ‘translating’ findings: they must actively nurture the trust and co-construction needed for effective uptake. This underscores that dissemination is not a one-off act, but an ongoing process of bridging research, practice, and the evolving identities of LCT themselves.

In this context, the growing role of social media and online platforms introduces new dimensions to the dissemination process. While few LCT in my studies explicitly referenced social media, some did mention podcasts or online communities as valuable spaces for reflection. This highlights both opportunities and ethical challenges: how to ensure that these digital spaces remain grounded in authentic, critical dialogue rather than being driven solely by branding (Berry, 2015). Although influencers often shape discourse in these digital arenas (Lieberman & Pointer Mace, 2010), the findings suggest that for LCT, the priority is not visibility but authenticity, spaces where personal narratives and research insights can intersect meaningfully. Future dissemination efforts could therefore explore co-created podcasts or collaborative video series that directly integrate LCT voices, while being grounded in an ethic of professional responsibility and reciprocal learning.

Table 24. Methodological Recommendations for Research with LCT

	Category	Recommendations
1	Participant Recruitment	Use snowball sampling to reach underrepresented or fragile LCT (e.g., those recovering from burnout).
2	Data Collection Flexibility	Offer multiple response formats (online, print, phone) and ensure accessibility for participants who are not familiar with technology.
3	Relational Approach	Build trust through empathy, active listening, and a clear interest in participants' lived experience.
4	Leveraging Social Dynamics	Capitalise on professional networks and word-of-mouth within school staff to encourage participation.
5	Designing Supportive Interventions	Ensure psychological safety during training, include realistic examples and address LCT-specific needs.
6	Training Delivery Strategies	Use varied didactic tools (case studies, role play, short lectures) and short, structured content segments.
7	Fostering Group Cohesion	Group participants by career stage to foster identification, mutual support, and open dialogue.

5. Practical implications

This dissertation's practical implications resonate with Donna Haraway's (1988) perspective that knowledge is inherently situated and relational, and thus cannot be separated from the material, social, and affective contexts in which it is produced. In line with this stance, the dissertation findings reinforce the argument advanced by de Lange et al. (2024) that complex interventions require the active participation of key stakeholders at all system levels, from conception to implementation.

5.1 Implications for teachers

A key implication of this research is the importance of balancing reactive and preventive strategies for LCTs. For those facing acute stress, immediate support measures, such as structured relaxation exercises or confidential coaching, can provide essential relief and help

to stabilise daily functioning. Importantly, these should not be seen as one-time fixes, but as part of a broader support ecosystem that acknowledges the potential for burnout relapse in this population (Poscia et al., 2016). Professional coaching or mentoring approaches that explicitly track stress trajectories and offer safe spaces for dialogue may be especially valuable in preventing repeated cycles of exhaustion and disengagement. Beyond crisis response, there is also a need for proactive strategies that encourage teachers to periodically step back and reassess their personal resources, job demands, and aspirations. Structured self-assessment exercises, informed by the transtheoretical model of change (Prochaska & DiClemente, 1983), can guide teachers to identify specific actions for growth or adaptation, whether it's modifying workloads, seeking targeted training, or cultivating trusted relationships for ongoing reflection. This approach promotes a culture of self-directed professional development, grounded in each teacher's evolving needs, rather than imposed external standards.

Additionally, findings from the intervention study underscore how tailored, context-sensitive professional development can foster renewed engagement and well-being among LCT. Teachers valued programmes that combined practical strategies for managing escalating demands with recognition of their professional identities and experiences. Co-designing learning activities with colleagues and aligning them with their own values made these interventions more meaningful and relevant. This highlights the importance of agency and co-construction in professional learning, moving beyond deficit-based models (Avalos, 2011; Day & Gu, 2010). By fostering spaces for dialogue and collaboration, such initiatives not only enhance individual learning but also strengthen collective practices and collegiality within schools.

Finally, the findings reinforce the importance of recognising generational and career-stage differences in teacher engagement and professional learning (Booth et al., 2021; Cawte, 2020). Early-career teachers grapple with identity formation and navigating micro-political landscapes (Schuck et al., 2017), mid-career teachers may face stagnation and complex role expectations, and LCT balance accumulated expertise with shifting personal priorities and the physical demands of ECE teaching. Designing professional development that acknowledges these trajectories can foster intergenerational learning, build collective efficacy, and support sustainable retention

5.2 Implications for school management

School leaders play a pivotal role in supporting LCT through work design and fostering a culture of well-being. Practical adjustments, such as reorganising tasks to allow longer lunch breaks and reducing administrative demands, can alleviate physical strain and create spaces for recovery. This aligns with research on the significance of task autonomy and ergonomic support for older workers (Cadiz et al., 2019; Finkelstein et al., 2021). Building on insights from Jung and Takeuchi (2018), career satisfaction among LCT also depends on supportive HRM practices that consider evolving aspirations and life stages. Annual appraisals should go beyond performance metrics to engage in authentic dialogue around teachers' well-being and future goals (Finsel et al., 2023). Participants repeatedly highlighted the value of empathic leadership, marked by active listening, genuine support, and co-constructed solutions, as critical for building trust and fostering a collaborative climate (Arghode et al., 2022).

The diversity of LCT retirement pathways, as evidenced by Babic et al. (2022), underscores the need for differentiated HRM strategies. Some LCT prefer gradual withdrawal, others maintain full engagement until retirement. School leaders can respond by offering flexible task redistribution, structured intergenerational exchanges, and coaching to align with teachers' evolving goals. Such measures challenge passive, standardised approaches and instead recognise LCT as valued, active contributors.

Finally, investing in intergenerational knowledge-sharing initiatives, such as gain circles or peer-led mentoring, can mitigate feelings of isolation and empower LCT as active co-constructors of practice (Bolton & Dacombe, 2020; Gerpott & Fasbender, 2020). Attention to physical working conditions and ergonomic improvements, as well as fostering cultures of relational trust, are essential to sustaining LCT engagement (Cau-Bareille, 2016; Burmeister et al., 2020).

5.3 Implications for continuing training of teachers

This dissertation underscores that continuing professional development for LCT must move beyond standardised “toolbox” approaches, often dominated by generic skill-updating workshops. Across the studies, particularly Study 4, teachers repeatedly expressed a preference for informal, relationally embedded learning opportunities, spaces where they could articulate their experiences, share concerns about identity shifts, and co-create solutions. Consequently, continuing training for LCT should blend targeted upskilling with structured dialogue that allows them to reflect on their evolving roles and career trajectories. In practical terms, this suggests integrating facilitated group discussions, narrative-based inquiry, and peer-led mentoring circles within formal training programmes (Keiler et al., 2023). Such practices foster trust, belonging, and the validation of personal and professional transitions, addressing the documented need for “spaces to put words” to complex career experiences.

Moreover, training initiatives should embrace a preventive, health-promoting orientation, as highlighted in Studies 2 and 5. Instead of waiting for burnout to occur, programmes can proactively support teachers in monitoring their own well-being and recalibrating work-life balances. Short, iterative modules focusing on emotional self-regulation, identity affirmation, and adaptive workload strategies can help LCTs sustain their professional engagement over time. Importantly, these initiatives must be designed in ways that respect teachers' agency and lived realities, embedding practical scenarios from early childhood education and facilitating co-construction of solutions. As Tonhäuser and Büker (2016) argued, the most effective learning environments are those that resonate with teachers' authentic professional contexts. By weaving together formal content with spaces for dialogue and reflection, continuing training can become a site of prevention, personal renewal, and professional sustainability, better attuned to the complex demands of late-career teaching.

5.4 Implications for decision makers

Policymakers also have a critical role in shaping educational environments that support LCT. Moving beyond technocratic models of continuing professional learning is a key starting point. As Avalos (2011) argued, professional learning for LCT is not just about acquiring

new skills but about identity, meaning, and relational trust. Therefore, policies should expand TPL's scope to include reflective and dialogic elements that validate LCT's evolving aspirations and professional agency. Moreover, promoting holistic well-being must become a priority. As Poscia et al. (2016) emphasize, health promotion should be proactive, integrated into daily practices rather than just reactive to burnout crises. This calls for policies that ensure LCT can sustain their engagement and thrive throughout their careers.

In addition to these shifts, it is crucial to incorporate age-friendly practices within HRM policies (Dorokhov et al., 2024). This includes not only combating ageism or any negative stereotypes and addressing gendered barriers to leadership roles (Inbar & Shiri, 2021) but also explicitly recognising the evolving physical and emotional needs of LCT. Such practices can challenge the limits of accountability-driven logic that often dominate educational policy, creating frameworks that see teachers as vital agents of change and valued contributors rather than mere units of output. This systemic rethinking requires listening to teachers' voices and fostering policies that reflect their lived realities.

Additionally, offering incentives for teachers to extend their careers can yield significant benefits for both educators and educational systems (Cole & Hollis-Sawyer, 2020; Wolverson & Hunt, 2015). However, as Nilsson (2016) and Newton and Ottley (2020) note, policies must recognise that retirement-aged workers are not a homogeneous group; decisions to continue teaching are driven by diverse motives, ranging from personal satisfaction to economic necessity. Thus, tailored financial incentives, phased retirement options, and flexible working arrangements should be complemented by strategies that respect teachers' lived experiences and aspirations. Such nuanced policies align with calls for an age-sensitive HRM framework that acknowledges LCT's essential contributions and fosters inclusive, intergenerational school cultures. By investing in supportive, differentiated approaches, policymakers can ensure that LCT remain engaged and effective contributors to the broader educational mission.

Equally importantly, policymakers must embrace a co-creative, system-wide perspective. Echoing the work of de Lange et al. (2024), this means embedding the active participation of stakeholders at all levels, including teachers, school leaders, and intermediaries, throughout the design, implementation, and evaluation phases of interventions. Incorporating feedback from teachers who have participated in targeted training is essential for enhancing decision-makers' awareness of LCT-specific needs. Teachers' narratives about stress, well-being, and evolving identities can help illustrate the need for systemic changes, particularly in in-service training and mental health support policies. For instance, addressing LCT well-being by reducing teacher-student ratios or offering flexible teaching arrangements can alleviate physical and emotional strain, promoting job satisfaction and retention. Collaboration with co-teachers also creates an intergenerational-friendly environment where LCT can share their expertise and learn from younger colleagues, building morale and strengthening collective engagement (Bullough et al., 2014; Llopert et al., 2018).

Incorporating LCT's concerns into decision-making processes can also foster the development of more effective in-service training policies that address teachers' actual challenges. Tailored programs should be offered across career stages, particularly for those approaching retirement, to help them navigate growing demands, burnout risks, and shifting professional roles. Promoting mental health awareness and allocating resources to sustain well-being initiatives are key steps in this process. Ultimately, recognizing that the well-being of LCT

is critical for educational quality will enable policymakers to craft more inclusive and supportive policy frameworks. By investing in teacher well-being, systems can foster environments that not only retain LCTs but also promote vibrant, intergenerational learning communities in schools.

In conclusion, the aging of the workforce represents a profound challenge for the long-term stability of our economic and social systems. Current strategies, which focus primarily on extending working lives to balance the rising dependency ratio, overlook critical questions about the sustainability and well-being of older workers, especially in professions like teaching and healthcare. Recent Swiss data (Gevasu Canu et al., 2023) show that these sectors are particularly affected by burnout, highlighting a pressing need for more holistic workforce planning. In teaching, this issue is compounded by successive waves of reform and intensified job demands that have distanced educators from their core mission. The resulting alienation not only threatens teachers' professional identities but also the quality of education itself. One participant from Study 3 aptly captured this sentiment: "If we keep discouraging the most experienced, the most seasoned/*chevronnés*, all that's left are the embittered." Such voices remind us of the urgency to invest not just in retaining LCT as bodies in classrooms but in ensuring that their accumulated wisdom, sense of purpose, and capacity for relational work remain vital assets to the school community.

Rethinking these dynamics requires a fundamental cultural shift: seeing teachers not as interchangeable labor but as trusted professionals whose voices and agency matter. It calls for creating viable alternatives for those who, due to physical strain or burnout risk, can no longer sustain the intensity of front-line teaching. It means addressing systemic issues, like the erosion of trust, the undervaluation of experience, and the loss of meaning, through policies that affirm teachers' worth and promote dignified, flexible transitions within educational settings. This is not merely about efficiency or economic return but about upholding the integrity of the teaching profession. Ultimately, the question becomes: who do we want in front of our children? Do we want schools populated by those who endure, or by those who continue to find purpose and connection in their work? Reaffirming trust in teachers is not just an economic necessity, it is an ethical imperative for the future of education.

References

References marked with an asterisk indicate studies included in the systematic review.

- Abdin, S., Welch, R. K., Byron-Daniel, J., & Meyrick, J. (2018). The effectiveness of physical activity interventions in improving well-being across office-based workplace settings: a systematic review. *Public health, 160*, 70-76.
- Abraham, J. D., & Hansson, R. O. (1995). Successful aging at work: An applied study of selection, optimization, and compensation through impression management. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 50*(2), P94-P103.
- Adams, J., & White, M. (2005). Why don't stage-based activity promotion interventions work?. *Health education research, 20*(2), 237-243.
- Admiraal, W., Veldman, I., Mainhard, T., & van Tartwijk, J. (2019). A typology of veteran teachers' job satisfaction: Their relationships with their students and the nature of their work. *Social Psychology of Education, 22*(2), 337-355.
- Ainsworth, S., & Oldfield, J. (2019). Quantifying teacher resilience: Context matters. *Teaching and Teacher Education, 82*, 117-128.
- Alden, L. E., & Trew, J. L. (2013). If it makes you happy: engaging in kind acts increases positive affect in socially anxious individuals. *Emotion, 13*(1), 64.
- Alexander, C., Wyatt-Smith, C., & Du Plessis, A. (2020). The role of motivations and perceptions on the retention of in-service teachers. *Teaching and Teacher Education, 96*, 103186.
- Allyn, D. (2016) *Make love, not war: the sexual revolution: an unfettered history*. Routledge, London
- Aloe, A. M., Amo, L. C., & Shanahan, M. E. (2014). Classroom management self-efficacy and burnout: A multivariate meta-analysis. *Educational psychology review, 26*, 101-126.
- Alonso, C., Fernández-Salineró, S., & Topa, G. (2019). The impact of both individual and collaborative job crafting on Spanish teachers' well-being. *Education Sciences, 9*(2), 74-83.
- Alves, R. F., Lopes, T., & Precioso, J. (2021). Teachers' well-being in times of Covid-19 pandemic: factors that explain professional well-being. *International Journal of Educational Research and Innovation, 15*, 203-217
- Amer, T., Campbell, K. L., & Hasher, L. (2016). Cognitive control as a double-edged sword. *Trends in cognitive sciences, 20*(12), 905-915.
- Appannah, A., & Biggs, S. (2015). Culture and the participation of older workers. *Journal of Social Work Practice, 29*(1), 37-51.
- Arghode, V., Lathan, A., Alagaraja, M., Rajaram, K., & McLean, G. N. (2022). Empathic organizational culture and leadership: conceptualizing the framework. *European Journal of Training and Development, 46*(1/2), 239-256.
- Ariza-Montes, A., Leal-Rodríguez, A. L., & Leal-Millán, A. G. (2016). Workplace bullying among teachers: An analysis from the Job Demands-Resources (JD-R) model perspective. *Journal of occupational and environmental medicine, 58*(8), 818-827.

- Armstrong-Stassen, M. (2008). Organisational practices and the post-retirement employment experience of older workers. *Human Resource Management Journal*, 18(1), 36-53.
- Aronsson, G., Theorell, T., Grape, T., Hammarström, A., Hogstedt, C., Marteinsdottir, I., ... & Hall, C. (2017). A systematic review including meta-analysis of work environment and burnout symptoms. *BMC public health*, 17, 1-13.
- Arnup, J., & Bowles, T. (2016). Should I stay or should I go? Resilience as a protective factor for teachers' intention to leave the teaching profession. *Australian Journal of Education*, 60(3), 229-244.
- Ary, D., Jacobs, L.C., & Sorensen, C., (2010). *Introduction to Research in Education*; Wadsworth. Cengage Learning: Boston, MA, USA
- Aslan, A., Erten, İ. H., & Dikilitaş, K. (2022). In-service EFL teachers' engagement in reflective practice via video enhanced observation. *Reflective Practice*, 23(3), 422-436.
- Atkinson, C., Beck, V., Brewis, J., Davies, A., & Duberley, J. (2021). Menopause and the workplace: New directions in HRM research and HR practice. *Human Resource Management Journal*, 31(1), 49-64.
- Attard, K. (2017). Personally driven professional development: Reflective self-study as a way for teachers to take control of their own professional development. *Teacher Development*, 21(1), 40-56.
- Aulia, A., Samudra, R., Ermawati, D., & Asy-Syifa, S. R. (2025). The influence of work engagement, work motivation, resilience, and job stress on the job satisfaction of honorary teachers in Central Java. *Journal of Applied Studies in Education and Management*, 7(1), 104-115
- Avalos, B. (2011). Teacher professional development in Teaching and Teacher Education over ten years. *Teaching and Teacher Education*, 27(1), 10-20.
- Babic, S., Mairitsch, A., Mercer, S., Sulis, G., Jin, J., King, J., ... Shin, S. (2022). Late-career language teachers in Austria and the UK: Pathways to retirement. *Teaching and Teacher Education*, 113, 103686.
- Bae, S., & Choi, M. (2023). Intertwined-isms: an exploration of relationships between ageism and sexism in workplace and non-work contexts. *Frontiers in Psychology*, 14, 1138812.
- Baker, D. (2005). Music service teachers' life histories in the United Kingdom with implications for practice. *International journal of music education*, 23(3), 263-277.
- Baker, J., Chaseling, M., Boyd, W., & Shipway, B. (2018). Teachers' response to a new mandatory professional development process: does it make a difference? *Professional Development in Education*, 44(4), 570-582.
- Bakker, A. B. (2011). An evidence-based model of work engagement. *Current directions in psychological science*, 20(4), 265-269.
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of managerial psychology*, 22(3), 309-328.
- Bakker, A. B., & Demerouti, E. (2008). Towards a model of work engagement. *Career development international*, 13(3), 209-223.
- Bakker, A. B., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, 22(3), 273-285.

-
- Bakker, A. B., & de Vries, J. D. (2021). Job Demands–Resources theory and self-regulation: New explanations and remedies for job burnout. *Anxiety, stress, & coping*, 34(1), 1-21.
- Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. (2023). Job demands–resources theory: Ten years later. *Annual review of organizational psychology and organizational behavior*, 10(1), 25-53.
- Ballet, K., Kelchtermans, G., & Loughran, J. (2006). Beyond intensification towards a scholarship of practice: analysing changes in teachers' work lives. *Teachers and teaching*, 12(2), 209-229.
- Baltes, M. M., & Lang, F. R. (1997). Everyday functioning and successful aging: The impact of resources. *Psychology and Aging*, 12(3), 433–443.
- Bandura, A. (1997). Self-efficacy: The exercise of control. Macmillan.
- Banfield, M., Fitzpatrick, S.J., Lamb, H., Giugni, M., Calcar, A.L., Stewart, E., et al. (2022). Co-creating safe spaces: Study protocol for translational research on innovative alternatives to the emergency department for people experiencing emotional distress and/or suicidal crisis. *PLoS one*, 17(10): e0272483.
- Beames, J. R., Spanos, S., Roberts, A., McGillivray, L., Li, S., Newby, J. M., ... & Werner-Seidler, A. (2023). Intervention programs targeting the mental health, professional burnout, and/or well-being of school teachers: Systematic review and meta-analyses. *Educational Psychology Review*, 35(1), 26.
- Beck, J. S. (2020). Investigating the third space: A new agenda for teacher education research. *Journal of Teacher Education*, 71(4), 379–391.
- Beier, M. E., Kanfer, R., Kooij, D. T., & Truxillo, D. M. (2022). What's age got to do with it? A primer and review of the workplace aging literature. *Personnel Psychology*, 75(4), 779-804.
- Beka, A., & Gjela, M. (2025). *Understanding Early Childhood Teachers' Identity*. International Journal of Educational Policy and Innovation, 15(1), 166.
- Beltman, S., Mansfield, C. F., Wosnitza, M., Weatherby-Fell, N., & Broadley, T. (2018). Using online modules to build capacity for teacher resilience. *Resilience in education: Concepts, contexts and connections*, 237-253.
- Ben-Peretz, M., Gottlieb, E., & Gideon, I. (2018). Coaching between experts–opportunities for teachers' professional development. *Teacher Development*, 22(3), 303-313.
- Berkhout, C., Berbra, O., Favre, J., Collins, C., Calafiore, M., Peremans, L., & Van Royen, P. (2022). Defining and evaluating the Hawthorne effect in primary care, a systematic review and meta-analysis. *Frontiers in Medicine*, 9, 1033486.
- Bernard, P., Romain, A. J., Trouillet, R., Gernigon, C., Nigg, C., & Ninot, G. (2014). Validation of the TTM processes of change measure for physical activity in an adult French sample. *International journal of behavioral medicine*, 21, 402-410.
- Boeskens, L., Nusche, D., & Yurita, M. (2020). Policies to Support Teachers' Continuing Professional Learning: A Conceptual Framework and Mapping of OECD Data. *OECD Education Working Papers*, No. 235.
- Bolton, E., & Dacombe, R. (2020). “Circles of support”: social isolation, targeted assistance, and the value of “ageing in place” for older people. *Quality in Ageing and Older Adults*, 21(2), 67-78.
- Booth, J., Coldwell, M., Müller, L. M., Perry, E., & Zuccollo, J. (2021). Mid-career teachers: A mixed methods scoping study of professional development, career progression and retention. *Education Sciences*, 11(6), 299.

- Borman, G. D., & Kimball, S. M. (2005). Teacher quality and educational equality: Do teachers with higher standards-based evaluation ratings close student achievement gaps?. *The elementary school journal*, 106(1), 3-20.
- Boshier, R., & Huang, Y. (2008). In the House of Scholarship of Teaching and Learning (SoTL), teaching lives upstairs and learning in the basement. *Teaching in Higher Education*, 13(6), 645-656.
- Bostic, B., Schock, N., Jeon, L., & Buettner, C. K. (2023). Early childhood teachers' sense of community and work engagement: Associations with children's social, emotional, and behavioral functioning. *Journal of School Psychology*, 98, 133-147.
- Boström, M., Björklund, C., Bergström, G., Nybergh, L., Schäfer Elinder, L., Stigmar, K., ... & Kwak, L. (2020). Health and work environment among female and male Swedish elementary school teachers—A cross-sectional study. *International Journal of Environmental Research and Public Health*, 17(1), 227.
- Bottiani, J. H., Duran, C. A., Pas, E. T., & Bradshaw, C. P. (2019). Teacher stress and burnout in urban middle schools: Associations with job demands, resources, and effective classroom practices. *Journal of School Psychology*, 77, 36-51.
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative research journal*, 9(2), 27-40.
- Bressman, S., Winter, J. S., & Efron, S. E. (2018). Next generation mentoring: Supporting teachers beyond induction. *Teaching and teacher education*, 73, 162-170.
- Brophy-Herb, H. E., Brincks, A., Cook, J. L., Stacks, A., Vallotton, C. D., Frosch, C., ... & Jennings, P. A. (2023). Stress intensity and exhaustion among infant and toddler teachers: Descriptive analysis and associations with sources of stress and coping strategy use. *Early education and development*, 34(7), 1545-1564.
- *Brouhier, Q., Coppe, T., März, V., & Raemdonck, I. (2023). Professional learning of late-career teachers in early childhood education: A matter of (im) balance between personal resources, job resources, and job demands. *Teaching and Teacher Education*, 133, 104273.
- *Brouhier, Q., März, V., Van Waes, S., & Raemdonck, I. (2021). From isolation to interaction: a social network perspective on older teachers' position in school organizations and age-related HR practices. *Work, Aging and Retirement*, 7(4), 322-338.
- Bryman, A. (2012) *Social Research Methods* (4th ed.). New York: Oxford University Press.
- Brücknerová, K., & Novotný, P. (2017). Intergenerational learning among teachers: overt and covert forms of continuing professional development. *Professional development in education*, 43(3), 397-415.
- Bullough Jr, R. V., Hall-Kenyon, K. M., MacKay, K. L., & Marshall, E. E. (2014). Head start and the intensification of teaching in early childhood education. *Teaching and Teacher Education*, 37, 55-63.
- Burić, I., Slišković, A., & Penezić, Z. (2019). Understanding teacher well-being: A cross-lagged analysis of burnout, negative student-related emotions, psychopathological symptoms, and resilience. *Educational Psychology*, 39(9), 1136-1155.
- Burmeister, A., Wang, M., & Hirschi, A. (2020). Understanding the motivational benefits of knowledge transfer for older and younger workers in age-diverse coworker dyads: An actor-partner interdependence model. *Journal of Applied Psychology*, 105(7), 748.

-
- Buruck, G., Dörfel, D., Kugler, J., & Brom, S. S. (2016). Enhancing well-being at work: The role of emotion regulation skills as personal resources. *Journal of occupational health psychology, 21*(4), 480.
- Cadiz, D. M., Brady, G. M., Yaldiz, L. M., Zaniboni, S., & Truxillo, D. M. (2022). Age stereotypes do matter: Looking through the lens of the attraction–selection–attrition model. *Work, Aging and Retirement, 8*(4), 339-342.
- Cannon, J. S., Kilburn, M. R., Karoly, L. A., Mattox, T., Muchow, A. N., & Buenaventura, M. (2018). Investing early: Taking stock of outcomes and economic returns from early childhood programs. *Rand health quarterly, 7*(4), 6.
- Cannon-Bowers, J. A., Salas, E., Tannenbaum, S. I., & Mathieu, J. E. (1995). Toward theoretically based principles of training effectiveness: A model and initial empirical investigation. *Military psychology, 7*(3), 141-164.
- Carminati, L. (2018). Generalizability in qualitative research: A tale of two traditions. *Qualitative health research, 28*(13), 2094-2101.
- Carmona-Halty, M., Salanova, M., Llorens, S., & Schaufeli, W. B. (2021). Linking positive emotions and academic performance: The mediated role of academic psychological capital and academic engagement. *Current psychology, 40*(6), 2938-2947.
- Carone, G., Eckefeldt, P., Giamboni, L., Laine, V., & Pamies, S. (2016). Pension Reforms in the EU since the Early 2000's: Achievements and Challenges Ahead. *European Economy Discussion Paper, (042)*.
- Carreon, T., Rotas, E., Cahapay, M., Garcia, K., Amador, R., & Anoba, J. L. (2021). Miedo al COVID-19 y al agotamiento de la Enseñanza Remota de los Maestros Filipinos de K a 12 [Fear of COVID-19 and the exhaustion of the Remote Teaching of the Filipino Masters of K to 12]. *International Journal of Educational Research and Innovation (IJERI), 15*, 552–567.
- Carstensen, L. L. & de Lang, F. R. (1996). Future Time Perspective Scale. Unpublished manuscript, Stanford University.
- Castro Silva, J., Peixoto, F., Galhoz, A., & Gaitas, S. (2024). Job demands and resources as predictors of well-being in Portuguese teachers. *European Journal of Teacher Education, 1*-24.
- Cau-Bareille, D. (2014). Les difficultés des enseignants en fin de carrière: des révélateurs des formes de pénibilité du travail [Difficulties experienced by teachers at the end of their careers: revealing forms of hardship in the workplace]. *Management Avenir, 73*(7), 149-170.
- Cau-Bareille, D. (2016). Vieillir au travail dans le champ de l'enseignement: une analyse mobilisant le modèle ergonomique et le modèle du système des activités [Ageing at work in the field of teaching: an analysis mobilising the ergonomic model and the activity system model]. *Nouvelle revue de psychosociologie, 22*(2), 125-142.
- Cawte, K. (2020). Teacher crisis: Critical events in the mid-career stage. *Australian Journal of Teacher Education (Online), 45*(8), 75–92.
- Chae, Y., & Kim, S. (2024). The Effects of Early Childhood Teachers' Professional Development and Grit on Their Teacher-Child Interactions. *International Journal of Advanced Culture Technology, 12*(3), 355-361.
- Cheval, B., Saoudi, I., Maltagliati, S., Fessler, L., Farajzadeh, A., Sieber, S., ... & Boissongontier, M. (2022). Cognitive function explains the association between academic education and increased physical activity.

- Ciccomascolo, L., & Riebe, D. (2006). Setting the stage for physical activity for secondary students. *Journal of Physical Education, Recreation & Dance*, 77(9), 34-39.
- Clarke, D., & Hollingsworth, H. (2002). Elaborating a model of teacher professional growth. *Teaching and teacher education*, 18(8), 947-967.
- Coburn, C. E., & Penuel, W. R. (2016). Research–practice partnerships in education: Outcomes, dynamics, and open questions. *Educational researcher*, 45(1), 48-54.
- Cochran, J., Crowne, K. A., & Carpenter, C. E. (2012). Impact of older-worker-friendly organizational policies on retirement attitudes and planning. *Organization Management Journal*, 9, 170-178.
- Cochran-Smith, M., & Lytle, S. L. (2015). *Inquiry as stance: Practitioner research for the next generation*. Teachers College Press.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*, pp280-287. Routledge: 2nd Edition.
- Cole, E. E., & Hollis-Sawyer, L. E. (2021). *Older women who work: Resilience, choice, and change* (pp. xvi-282). American Psychological Association.
- Collie, R. J. (2023). Teacher well-being and turnover intentions: Investigating the roles of job resources and job demands. *British Journal of Educational Psychology*, 93(3), 712-726.
- Collie, R. J., Granziera, H., & Martin, A. J. (2018). Teachers’ perceived autonomy support and adaptability: An investigation employing the job demands-resources model as relevant to workplace exhaustion, disengagement, and commitment. *Teaching and Teacher Education*, 74, 125–136.
- Collie, R. J., Shapka, J. D., Perry, N. E., & Martin, A. J. (2015). Teacher well-being: Exploring its components and a practice-oriented scale. *Journal of Psychoeducational Assessment*, 33(8), 744-756.
- Converso, D., Viotti, S., Guidetti, G., & Sottimano, I. (2024). Association between menopause and occupational burnout in teachers: A cross-sectional study. *Critical Public Health*, 34(1), 1–12.
- Coppe, T., Hoekstra, R., Helgetun, J. B., Schwarzbach, N. R., & van der Velden, M. (2025). Evidence-based research in education: the questionable epistemic status of RCTs. *Critical Studies in Education*, 1-17.
- Corneille, O., Havemann, J., Henderson, E. L., IJzerman, H., Hussey, I., Orban de Xivry, J. J., ... & Lotter, L. D. (2023). Beware ‘persuasive communication devices’ when writing and reading scientific articles. *ELife*, 12, e88654.
- Corrigan, P. W., Morris, S. B., Michaels, P. J., Rafacz, J. D., & Rüsch, N. (2012). Challenging the public stigma of mental illness: a meta-analysis of outcome studies. *Psychiatric services*, 63(10), 963-973.
- Corso-de-Zúñiga, S., Moreno-Jiménez, B., Garrosa, E., Blanco-Donoso, L. M., & Carmona-Cobo, I. (2020). Personal resources and personal vulnerability factors at work: An application of the Job Demands-Resources model among teachers at private schools in Peru. *Current Psychology*, 39, 325-336.
- Costanza, M. E., Luckmann, R., Stoddard, A. M., Avrunin, J. S., White, M. J., Stark, J. R., ... & Rosal, M. C. (2005). Applying a stage model of behavior change to colon cancer screening. *Preventive Medicine*, 41(3-4), 707-719.
- Crawford, E. R., LePine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: a theoretical extension and meta-analytic test. *Journal of Applied Psychology*, 95, 5, 834–848.

-
- Creagh, S., Thompson, G., Mockler, N., Stacey, M., & Hogan, A. (2023). Workload, work intensification and time poverty for teachers and school leaders: A systematic research synthesis. *Educational Review*, 1-20.
- Creswell, J. W. (2022). *A concise introduction to mixed methods research*. SAGE publications: Thousand Oaks, CA, USA.
- Creswell, J. W., & Clark, V. P. (2011). *Mixed methods research*. SAGE Publications.
- Creswell, J. W., & Clark, V.L.P. (2017). *Designing and conducting mixed methods research*. Sage publications.
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications.
- Creswell, J.W. (2007). *Qualitative inquiry & Research Design* (2nd ed.). Thousand Oaks: Sage Publications.
- Cronin, C., Abbott, J., Asiamah, N., & Smyth, S. (2024). Menopause at work-An organisation-based case study. *Nursing Open*, 11(1), e2058.
- Cumming, T. (2017). Early childhood educators' well-being: An updated review of the literature. *Early Childhood Education Journal*, 45, 583-593.
- Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development*. Learning policy institute.
- Day, C. (2017). *Teachers' worlds and work: Understanding complexity, building quality*. Routledge.
- Day, C., & Gu, Q. (2007). Variations in the conditions for teachers' professional learning and development: Sustaining commitment and effectiveness over a career. *Oxford review of education*, 33(4), 423-443.
- Day, C., & Gu, Q. (2009). Veteran teachers: commitment, resilience, and quality retention. *Teachers and Teaching: Theory and Practice*, 15(4), 441-4457.
- de Lange, A. H., Taris, T. W., Jansen, P., Kompier, M. A., Houtman, I. L., & Bongers, P. M. (2010). On the relationships among work characteristics and learning-related behavior: Does age matter?. *Journal of Organizational Behavior*, 31(7), 925-950.
- de Lange, A. H., Teoh, K., Fleuren, B., Christensen, M., Medisauskaite, A., Løvseth, L. T., ... & Correia, I. (2024). Opportunities and challenges in designing and evaluating complex multilevel, multi-stakeholder occupational health interventions in practice. *Work & Stress*, 38(4), 352-372.
- de Lange, A. H., Van Yperen, N. W., Van der Heijden, B. I., & Bal, P. M. (2010). Dominant achievement goals of older workers and their relationship with motivation-related outcomes. *Journal of vocational behavior*, 77(1), 118-125.
- Decius, J., Schaper, N., Klug, K., & Seifert, A. (2023). Active learning, active shaping, or both? A cross-lagged panel analysis of reciprocal effects between work design and informal workplace learning, and the mediating role of job crafting. *Journal of Vocational Behavior*, 144, 103893.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86(3), 499-512. .86.3.499
- DiCarlo, C. F., Meaux, A. B., & LaBiche, E. H. (2020). Exploring mindfulness for perceived teacher stress and classroom climate. *Early Childhood Education Journal*, 48(4), 485-496.

- Dicke, T., Stebner, F., Linninger, C., Kunter, M., & Leutner, D. (2018). A longitudinal study of teachers' occupational well-being: Applying the job demands-resources model. *Journal of Occupational Health Psychology, 23*(2), 262–277.
- Dicker, D., Nguyen, G., Abate, D., Abate, K. H., Abay, S. M., Abbafati, C., ... & Belay, S. A. (2018). Global, regional, and national age-sex-specific mortality and life expectancy, 1950–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The lancet, 392*(10159), 1684-1735.
- Diehl, M., Smyer, M. A., & Mehrotra, C. M. (2020). Optimizing aging: A call for a new narrative. *American Psychologist, 75*(4), 577.
- Diliberti, M. K., & Schwartz, H. L. (2023). Educator Turnover Has Markedly Increased, but Districts Have Taken Actions to Boost Teacher Ranks: Selected Findings from the Sixth American School District Panel Survey. Research Report. RR-A956-14. *RAND Corporation*.
- Dishon-Berkovits, M., Riva, E., & Lucchini, M. (2024). The relationship between job demands, resources and subjective well-being: The role of work-family conflict across the life course. *Current Psychology, 43*(9), 8085-8101.
- Dixon-Woods, M., Sutton, A., Shaw, R., Miller, T., Smith, J., Young, B., ... & Jones, D. (2007). Appraising qualitative research for inclusion in systematic reviews: a quantitative and qualitative comparison of three methods. *Journal of Health Services Research & Policy, 12*(1), 42–47.
- do Carmo Fernandes, M., & Martins, V. (2023). Personal resources, work demands and work outcomes: A test of the JD-R model. *Open Journal of Business and Management, 11*(4), 1704-1722.
- Dorokhov, O., Jaakson, K., & Dorokhova, L. (2024). Age-friendly human resource practices: a comparison of Baltic and Nordic countries. *Baltic Journal of Management, 19*(6), 133-153.
- Draucker, C. B., Martsolf, D. S., Ross, R., Cook, C. B., Stidham, A. W., & Mweemba, P. (2009). The essence of healing from sexual violence: A qualitative metasynthesis. *Research in Nursing & Health, 32*(4), 366–378.
- Du, L., Xu, B., Huang, C., Zhu, L., & He, N. (2020). Menopausal symptoms and perimenopausal healthcare-seeking behavior in women aged 40–60 years: a community-based cross-sectional survey in Shanghai, China. *International journal of environmental research and public health, 17*(8), 2640.
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: perseverance and passion for long-term goals. *Journal of personality and social psychology, 92*(6), 1087.
- Eadie, P., Levickis, P., Murray, L., Page, J., Elek, C., & Church, A. (2021). Early childhood educators' wellbeing during the COVID-19 pandemic. *Early Childhood Education Journal, 49*(5), 903-913.
- Ebbinghaus, B., & Hofäcker, D. (2013). Reversing early retirement in advanced welfare economies: A paradigm shift to overcome push and pull factors. *Comparative Population Studies, 38*(4).
- Education Council. (2001). The concrete future objectives of education and training systems. Report from the Education Council to the European Union.
- Edwards-Groves, C., Kemmis, S., & Wilkinson, J. (2018). Learning practices: Becoming a practitioner. Springer.

-
- Elicker, J., Wen, X., Kwon, K. A., & Sprague, J. B. (2013). Early Head Start relationships: Association with program outcomes. *Early Education & Development*, 24(4), 491-516.
- Enthoven, S., Dupriez, V., & März, V. (2024). Where and how do teachers continue to learn their job? Postures and pathways within a “professional learning landscape”. *Revue française de pédagogie*, 223(2), 129-148.
- Eren, A. (2012). Prospective teachers' interest in teaching, professional plans about teaching and career choice satisfaction: A relevant framework? *Australian Journal of Education*, 56(3), 303-318.
- Eros, J. (2011). The career cycle and the second stage of teaching: Implications for policy and professional development. *Arts Education Policy Review*, 112(2), 65–70.
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics*, 5(1), 1-4.
- European Agency for Safety and Health at Work, Dragano, N., Gerö, K., & Wahrendorf, M. (2024). Mental health at work after the COVID-19 pandemic: what European figures reveal : report, Publications Office of the European Union.
- European Commission/EACEA/Eurydice. (2023). *Structural indicators for monitoring education and training systems in Europe 2023: Early childhood education and care*. Publications Office of the European Union.
- European Commission (2002) European Report on Quality Indicators of Lifelong Learning (Brussels).
- European Commission (2020). Digital Education Action Plan 2021-2027.
- European Commission: Directorate-General for Education, Youth, Sport and Culture. (2023). Staff shortages in early childhood education and care (ECEC): policy brief. Publications Office of the European Union.
- Eurostat. (2024). *Population structure and ageing*. Statistics Explained. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Population_structure_and_ageing. Accessed May 25, 2025
- Evans, L. (2023). The emergence of a distinctive European scholarship of professional development: Challenging mainstream conceptualisations, consensus and causality claims. *European Journal of Teacher Education*, 1-19.
- Everhardt, S. L. (2009). The barriers low income women face in achieving economic self-sufficiency and homeownership: Reports from a qualitative study in the Midwest. Wayne State University.
- Evers, A. T., van der Heijden, B. I., Kreijns, K., & Vermeulen, M. (2016). Job demands, job resources, and flexible competence: The mediating role of teachers’ professional development at work. *Journal of Career Development*, 43(3), 227-243.
- Fang, Y., Mizusawa, K., Ng, C. S., & Chen Chen, A. (2025). Teacher Resilience, Professional Learning, and Professionalism in Singapore. In *Teacher Professional Learning* (pp. 299-316). Springer, Singapore.
- Farrell, C. C., Penuel, W. R., Coburn, C. E., Daniel, J., & Steup, L. (2021). Practice Partnerships in Education: The State of the Field. *William T. Grant Foundation*.
- Fasbender, U., Wang, M., Voltmer, J. B., & Deller, J. (2016). The meaning of work for post-retirement employment decisions. *Work, aging and retirement*, 2(1), 12-23.

- Fédération Wallonie-Bruxelles (2022). Les indicateurs de l'enseignement [Education indicators 2022]. Bruxelles.
- Fédération Wallonie-Bruxelles (2023). Les Indicateurs de l'enseignement 2023 [Educational indicators 2023]. 18th Eds. FWB Publishing: Brussels.
- Fehr, H., Jokisch, S., & Kotlikoff, L. J. (2008). Fertility, mortality and the developed world's demographic transition. *Journal of policy modeling*, 30(3), 455-473.
- Ferman, T. (2002). Academic professional development practice : what lecturers find valuable. *The International Journal for Academic Development*, 7(2), 146-158.
- Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving integration in mixed methods designs—principles and practices. *Health services research*, 48(6pt2), 2134-2156.
- Finkelstein, L. M., Hanrahan, E. A., & Thomas, C. L. (2018). An expanded view of age bias in the workplace. In *Aging and work in the 21st century* (pp. 59-101). Routledge.
- Finsel, J. S., Wöhrmann, A. M., & Deller, J. (2023). A conceptual cross-disciplinary model of organizational practices for older workers: multilevel antecedents and outcomes. *The International Journal of human resource management*, 34(22), 4344-4396.
- Fletcher, W. L., Hansson, R. O., & Bailey, L. (1992). Assessing occupational self-efficacy among middle-aged and older adults. *Journal of Applied Gerontology*, 11(4), 489-501.
- Forsat, N. D., Palmowski, A., Palmowski, Y., Boers, M., & Buttgerit, F. (2020). Recruitment and retention of older people in clinical research: a systematic literature review. *Journal of the American Geriatrics Society*, 68(12), 2955-2963.
- Fouché, C., & Light, G. (2011). An Invitation to Dialogue: 'The World Café' In Social Work Research. *Qualitative social work*, 10(1), 28-48.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American psychologist*, 56(3), 218.
- Freedy, J. R., Shaw, D. L., Jarrell, M. P., & Masters, C. R. (1992). Towards an understanding of the psychological impact of natural disasters: An application of the Conservation of Resources stress model. *Journal of Traumatic Stress*, 5, 441-454.
- Freund, A. M. (2008). Successful aging as management of resources: The role of selection, optimization, and compensation. *Research in Human Development*, 5(2), 94-106.
- Fullan, M., & Hargreaves, A. (2012). Reviving teaching with 'professional capital'. *Education week*, 31(33), 30-36.
- Gable, S. L., & Haidt, J. (2005). What (and why) is positive psychology?. Review of general psychology, 9(2), 103-110.
- Galanakis, M. D., & Tsitouri, E. (2022). Positive psychology in the working environment. Job demands-resources theory, work engagement and burnout: A systematic literature review. *Frontiers in Psychology*, 13, 1022102.
- García-Arroyo, J., Cárdenas Moncayo, I., Gómez García, A. R., & Osca Segovia, A. (2021). Understanding the relationship between situational strength and burnout: A multi-sample analysis. *International Journal of Environmental Research and Public Health*, 18(1), 162.
- Gartia, R., & Sharma, S. (2013). Continuous professional development: A panacea for teachers. *International Journal of Research Pedagogy and Technology in Education and Movement Sciences*, 2(01).

-
- Gaudreau, N., Trépanier, N. S., & Daigle, S. (Éds.). (2021). *Le développement professionnel en milieu éducatif : des pratiques favorisant la réussite et le bien-être* [Professional development in education: practices that promote success and well-being]. Presses de l'Université Laval.
- Geeraerts, K., Tynjälä, P., & Heikkinen, H. L. (2018). Inter-generational learning of teachers: what and how do teachers learn from older and younger colleagues?. *European Journal of Teacher Education*, 41(4), 479-495.
- Gerpott, F. H., & Fasbender, U. (2020, March). Intergenerational learning in age-diverse meetings: A social comparison perspective. In *Managing meetings in organizations* (Vol. 20, pp. 185-206). Emerald Publishing Limited.
- Gerpott, F. H., Lehmann-Willenbrock, N., & Voelpel, S. C. (2017). A phase model of intergenerational learning in organizations. *Academy of Management Learning & Education*, 16(2), 193-216.
- Gershon, R. R., Lin, S., & Li, X. (2002). Work stress in aging police officers. *Journal of occupational and environmental medicine*, 44(2), 160-167.
- Ghanizadeh, A., & Jahedizadeh, S. (2015). Teacher burnout: A review of sources and ramifications. *British Journal of Education, Society & Behavioural Science*, 6(1), 24-39.
- Gill, M. J. (2004). When information does not deter stereotyping: Prescriptive stereotyping can foster bias under conditions that deter descriptive stereotyping. *Journal of experimental social psychology*, 40(5), 619-632.
- Goller, M., & Paloniemi, S. (2022). Agency: Taking stock of workplace learning research. In *Research Approaches on Workplace Learning: Insights from a Growing Field* (pp. 3-28). Cham: Springer International Publishing.
- Gomez, R. E., Kagan, S. L., & Fox, E. A. (2019). Professional development of the early childhood education teaching workforce in the United States: An overview. *The Professional Development of Early Years Educators*, 11-28.
- Gordon, H. J., Demerouti, E., Le Blanc, P. M., & Bipp, T. (2015). Job crafting and performance of Dutch and American health care professionals. *Journal of Personnel Psychology*.
- *Gore, J., & Rickards, B. (2021). Rejuvenating experienced teachers through Quality Teaching Rounds professional development. *Journal of Educational Change*, 22(3), 335-354.
- Granot, E., Brashear, T. G., & Cesar Motta, P. (2012). A structural guide to in-depth interviewing in business and industrial marketing research. *Journal of Business & Industrial Marketing*, 27(7), 547-553.
- Grant, A. A., Jeon, L., & Buettner, C. K. (2019). Relating early childhood teachers' working conditions and well-being to their turnover intentions. *Educational psychology*, 39(3), 294-312.
- Granziera, H. (2022). Teachers' personal resources: What do we know and where do we go? A scoping review through the lens of job demands-resources theory. *Journal of Positive Psychology and Well-being*, 6(2), 1695-1718.
- Granziera, H., Collie, R. J., & Martin, A. J. (2022). Teacher well-being: A complementary variable-and person-centered approach harnessing Job Demands-Resources theory. *Contemporary Educational Psychology*, 71, 102121.

- Granziera, H., Collie, R., & Martin, A. (2021). Understanding teacher wellbeing through job demands-resources theory. In C. F. Mansfield (Ed.), *Cultivating teacher resilience* (pp. 229–244). Springer.
- Greene, B. A. (2015). Measuring cognitive engagement with self-report scales: Reflections from over 20 years of research. *Educational Psychologist*, 50(1), 14-30. <https://doi.org/10.1080/00461520.2014.989230>
- Greller, M. M., & Simpson, P. (1999). In search of late career: A review of contemporary social science research applicable to the understanding of late career. *Human Resource Management Review*, 9(3), 309–347.
- Grover, S. L., Teo, S. T., Pick, D., Roche, M., & Newton, C. J. (2018). Psychological capital as a personal resource in the JD-R model. *Personnel Review*, 47(4), 968-984.
- Guglielmi, D., Bruni, I., Simbula, S., Fraccaroli, F., & Depolo, M. (2016). What drives teacher engagement: A study of different age cohorts. *European Journal of Psychology of Education*, 31, 323-340.
- Guseva Canu, I., Getzmann, R., Shoman, Y., Rota, F., Saillant, S., von Känel, R., ... & Wahlen, A. (2024). Diagnosis and treatment of occupational burnout in the Swiss outpatient sector: A national survey of healthcare professionals' attributes and attitudes. *Plos one*, 19(12), e0294834.
- Guskey, T. R. (2003). What makes professional development effective?. *Phi delta kappan*, 84(10), 748-750.
- Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational behavior and human performance*, 16(2), 250-279.
- Hagedoorn, M., Koopman, M., Bouwmans, M., & de Bruijn, E. (2025). One size does not fit all-mapping informal and formal professional development activities of vocational teachers. *Teachers and Teaching*, 31(3), 372-392.
- Halbesleben, J. R., & Bowler, W. M. (2007). Emotional exhaustion and job performance: the mediating role of motivation. *Journal of applied psychology*, 92(1), 93.
- Hannes K. (2011). Critical appraisal of qualitative research. In J. Noyes, A. Booth, K. Hannes, A. Harden, J. Harris, S. Lewin, & C. Lockwood (Eds.), *Supplementary guidance for inclusion of qualitative research in Cochrane systematic reviews of interventions* (Version 1, updated August 2011). Cochrane Collaboration Qualitative Methods Group.
- Hanselman, P., Grigg, J., K. Bruch, S., & Gamoran, A. (2016). The consequences of principal and teacher turnover for school social resources. In *Family environments, school resources, and educational outcomes* (pp. 49-89). Emerald Group Publishing Limited.
- Hardaningtyas, R. T. (2020). Personal resources and turnover intention among private sector employees: Does work engagement still matter?. *JEMA: Jurnal Ilmiah Bidang Akuntansi Dan Manajemen*, 17(1), 1-18.
- *Hargreaves, E., & Elhawary, D. (2019). Professional development through mutually respectful relationship: Senior teachers' learning against the backdrop of hierarchical relationships. *Professional development in education*, 45(1), 46-58.
- Hascher, T., & Waber, J. (2021). Teacher well-being: A systematic review of the research literature from the year 2000–2019. *Educational research review*, 34, 100411.
- Heffernan, A., Bright, D., Kim, M., Longmuir, F., & Magyar, B. (2022). 'I cannot sustain the workload and the emotional toll': Reasons behind Australian teachers' intentions

-
- to leave the profession. *Australian Journal of Education*, 66(2), 196-209.
<https://doi.org/10.1177/00049441221086654>
- Hendriks, T., Schotanus-Dijkstra, M., Hassankhan, A., Sardjo, W., Graafsma, T., Bohlmeijer, E., & de Jong, J. (2020). Resilience and well-being in the Caribbean: Findings from a randomized controlled trial of a culturally adapted multi-component positive psychology intervention. *The Journal of Positive Psychology*, 15(2), 238-253.
- Heyvaert, M., Hannes, K., & Onghena, P. (2016). Using mixed methods research synthesis for literature reviews: the mixed methods research synthesis approach (Vol. 4). Sage Publications.
- Hidajat, T. J., Edwards, E. J., Wood, R., & Campbell, M. (2023). Mindfulness-based interventions for stress and burnout in teachers: A systematic review. *Teaching and teacher education*, 134, 104303.
- Hinrichs, K. (2021). Recent pension reforms in Europe: More challenges, new directions. An overview. *Social policy & administration*, 55(3), 409-422.
- Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, 6(4), 307-324.
- Hobfoll, S. E. (2011). Conservation of resource caravans and engaged settings. *Journal of occupational and organizational psychology*, 84(1), 116-122.
- Hobfoll, S. E., Johnson, R. J., Ennis, N., & Jackson, A. P. (2003). Resource loss, resource gain, and emotional outcomes among inner city women. *Journal of Personality and Social Psychology*, 84(3), 632-643.
- Hobfoll, S. E., Tracy, M., & Galea, S. (2006). The impact of resource loss and traumatic growth on probable PTSD and depression following terrorist attacks. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies*, 19(6), 867-878.
- Hoekstra, A., Brekelmans, M., Beijaard, D., & Korthagen, F. (2009). Experienced teachers' informal learning: Learning activities and changes in behavior and cognition. *Teaching and Teacher Education*, 25(5), 663-673.
- Hogg, L. M., Elvira, Q., & Yates, A. S. (2024). *Identity Development of Career-Change Secondary Teachers: A Systematic Review of Theoretical Lenses, Emerging Identities, and Implications for Supporting Transition into Teaching*. *Education Sciences*, 14(8), 857. <https://doi.org/10.3390/educsci14080857>
- Holman, D., & Walker, A. (2021). Understanding unequal ageing: towards a synthesis of intersectionality and life course analyses. *European Journal of Ageing*, 18(2), 239-255.
- Holton III, E. F., Bates, R. A., & Ruona, W. E. (2000). Development of a generalized learning transfer system inventory. *Human resource development quarterly*, 11(4), 333-360.
- *Hollweck, T. (2019). "I love this stuff!": a Canadian case study of mentor-coach well-being. *International Journal of Mentoring and Coaching in Education*.
- Hong, X., Zhang, M., & Liu, Q. (2021). Preschool teachers' technology acceptance during the COVID-19: An adapted technology acceptance model. *Frontiers in Psychology*, 12, 691492.
- Hooghart, A. M. (2006). Educational reform in Japan and its influence on teachers' work. *International Journal of Educational Research*, 45(4-5), 290-301.

- Hoole, C., & Bonnema, J. (2015). Work engagement and meaningful work across generational cohorts. *SA Journal of Human Resource Management*, 13(1), 1-11.
- Huberman, M. (1989). Les phases de la carrière enseignante: un essai de description et de prévision [The phases of the teaching career: an attempt at describing and predicting]. *Revue française de pédagogie*, 5–16.
- Hunzicker, J. (2011). Effective professional development for teachers: A checklist. *Professional Development in Education*, 37(2), 177–179.
- Hyndman, R. J., Zeng, Y., & Shang, H. L. (2021). Forecasting the old-age dependency ratio to determine a sustainable pension age. *Australian & New Zealand Journal of Statistics*, 63(2), 241-256.
- *Iancu-Haddad, D., & Oplatka, I. (2009). Mentoring novice teachers: Motives, process, and outcomes from the mentor's point of view. *The new educator*, 5(1), 45-65.
- Idowu, M. I., & Szameitat, A. J. (2023). Executive function abilities in cognitively healthy young and older adults—A cross-sectional study. *Frontiers in Aging Neuroscience*, 15, 976915.
- Inbar, L., & Shiri, S. A. (2021). Managing the emotional aspects of compassion fatigue among teachers in Israel: a qualitative study. *Journal of Education for Teaching*, 47(4), 562-575.
- Ingersoll, R. M., Merrill, E., Stuckey, D., & Collins, G. (2018). Seven trends: The transformation of the Teaching Force – Updated October 2018. CPRE Research Reports. Retrieved from
- Irina, G. C., Isabelle, B., & Yara, S. (2023). O-192 Effectiveness of organizational interventions to prevent occupational burnout: a systematic review and meta-analysis. *Occupational and Environmental Medicine*, 80(A66).
- Irvine, A. (2011). Duration, dominance and depth in telephone and face-to-face interviews: A comparative exploration. *International journal of qualitative methods*, 10(3), 202-220.
- Jakovljevic, M., & Laaser, U. (2015). Population aging from 1950 to 2010 in seventeen transitional countries in the wider region of South Eastern Europe. *South Eastern European Journal of Public Health (SEEJPH)*.
- Jakovljevic, M., Westerman, R., Sharma, T., & Lamnissos, D. (2021). Aging and global health. *Handbook of global health*, 73-102.
- Jansen in de Wal, J., van den Beemt, A., Martens, R. L., & den Brok, P. J. (2020). The relationship between job demands, job resources and teachers' professional learning: is it explained by self-determination theory? *Studies in Continuing Education*, 42(1), 17-39.
- Jaquith, A., Mindich, D., Wei, R. C., & Darling-Hammond, L. (2011). Teacher Professional Learning in the U.S.: Case Studies of State Policies and Strategies. *The Education Digest*, 77, 33-39. - Accessed on May 20, 2025
- Jeon, H. J., Kwon, K. A., Walsh, B., Burnham, M. M., & Choi, Y. J. (2019). Relations of early childhood education teachers' depressive symptoms, job-related stress, and professional motivation to beliefs about children and teaching practices. *Early education and development*, 30(1), 131-144.
- Jeon, L., Buettner, C. K., & Grant, A. A. (2018). Early childhood teachers' psychological well-being: Exploring potential predictors of depression, stress, and emotional exhaustion. *Early Education and Development*, 29(1), 53–69.

-
- Jin, J., Yun, J., & Wegis, H. (2013). Changing physical education teacher education curriculum to promote inclusion. *Quest*, 65(3), 372-383.
- Johnson, J., Gooding, P. A., Wood, A. M., & Tarrier, N. (2010). Resilience as positive coping appraisals: Testing the schematic appraisals model of suicide (SAMS). *Behaviour research and therapy*, 48(3), 179-186.
- Jung, Y., & Takeuchi, N. (2018). A lifespan perspective for understanding career self-management and satisfaction: The role of developmental human resource practices and organizational support. *Human Relations*, 71(1), 73-102.
- Kanasi, E., Ayilavarapu, S., & Jones, J. (2016). The aging population: demographics and the biology of aging. *Periodontology 2000*, 72(1), 13-18.
- Kanfer, R., & Ackerman, P. L. (2004). Aging, adult development, and work motivation. *Academy of Management Review*, 29(3), 440-458.
- Karlberg, M., & Bezzina, C. (2022). The professional development needs of beginning and experienced teachers in four municipalities in Sweden. *Professional Development in Education*, 48(4), 624-641.
- Katsarou, E., Chatzipanagiotou, P., & Sougari, A. M. (2023). A Systematic Review on Teachers' Well-Being in the COVID-19 Era. *Education Sciences*, 13(9), 927.
- Keck Frei, A., Berweger, S., & Bieri Buschor, C. (2017). Men considering (and choosing) teaching as a career: what accounts for their decision to become a teacher?. *European Journal of Teacher Education*, 40(4), 535-549.
- Keiler, L. S., Diotti, R., & Hudon, K. (2023). Supporting teachers as they support each other: Lessons concerning mentor teacher feedback to teacher mentees. *Professional development in education*, 49(2), 225-242.
- Kelchtermans, G. (2009). Who I am in how I teach is the message: self-understanding, vulnerability and reflection. *Teachers and Teaching: theory and practice*, 15(2), 257-272.
- Kelchtermans, G. (2017). 'Should I stay or should I go?': Unpacking teacher attrition/retention as an educational issue. *Teachers and teaching*, 23(8), 961-977.
- Kennedy, M. M. (2016). How does professional development improve teaching?. *Review of educational research*, 86(4), 945-980.
- Kim, L. E., & Burić, I. (2020). Teacher self-efficacy and burnout: Determining the directions of prediction through an autoregressive cross-lagged panel model. *Journal of Educational Psychology*, 112(8), 1661.
- Kirillov, A. V., Tanatova, D. K., Vinichenko, M. V., & Makushkin, S. A. (2015). Theory and practice of time-management in education. *Asian Social Science*, 11(19), 193-204.
- Kleine, A. K., Rudolph, C. W., & Zacher, H. (2019). Thriving at work: A meta-analysis. *Journal of Organizational Behavior*, 40(9-10), 973-999.
- Knight, C., Patterson, M., & Dawson, J. (2019). Work engagement interventions can be effective: a systematic review. *European Journal of Work and Organizational Psychology*, 28(3), 348-372.
- Koerber, N., Marquez-Mendez, M., Mensah, A., Fasching-Varner, K., & Schrader, P. G. (2023). Sustaining teacher needs: A systematic narrative review exploring teacher retention, attrition, and motivation. *Literature Reviews in Education and Human Services*, 2(2), 1-20.
- Komba, S. C., & Mwakabenga, R. J. (2019). Teacher professional development in Tanzania: Challenges and opportunities. *Educational leadership*.

- Komp, K. (2018). Shifts in the realized retirement age: Europe in times of pension reform and economic crisis. *Journal of European social policy*, 28(2), 130-142.
- Korthagen, F. (2017). Inconvenient truths about teacher learning: Towards professional development 3.0. *Teachers and teaching*, 23(4), 387-405.
- Kreber, C. (2002). Controversy and consensus on the scholarship of teaching. *Studies in Higher Education*, 27(2), 151-167.
- Krekula, C., & Vickerstaff, S. (2020). The 'older worker' and the 'ideal worker': A critical examination of concepts and categorisations in the rhetoric of extending working lives. *Extended working life policies: International gender and health perspectives*, 29-45.
- Kwakman, K. (2003). Factors affecting teachers' participation in professional learning activities. *Teaching and Teacher Education*, 19(2), 149-170.
- Kwon, K. A., Ford, T. G., Salvatore, A. L., Randall, K., Jeon, L., Malek-Lasater, A., ... & Han, M. (2020). Neglected elements of a high-quality early childhood workforce: Whole teacher well-being and working conditions. *Early Childhood Education Journal*, 1-12.
- Kwon, K. A., Ford, T. G., Tsotsoros, J., Randall, K., Malek-Lasater, A., & Kim, S. G. (2022). Challenges in working conditions and well-being of early childhood teachers by teaching modality during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 19(8), 4919.
- Kyndt, E., Gijbels, D., Grosemans, I., & Donche, V. (2016). Teachers' everyday professional development: Mapping informal learning activities, antecedents, and learning outcomes. *Review of educational research*, 86(4), 1111-1150.
- Kyriacou, C. (2011). Teacher stress: From prevalence to resilience. *Handbook of stress in the occupations*, 161-173.
- Lam, B. H. (2019). Social support, wellbeing, and teacher development. Springer Nature.
- Landis, J. R., & Koch, G. G. (1977). An application of hierarchical kappa-type statistics in the assessment of majority agreement among multiple observers. *Biometrics*, 363-374.
- Lang, F. R., & Carstensen, L. L. (2002). Time counts: future time perspective, goals, and social relationships. *Psychology and aging*, 17(1), 125.
- Lang, F. R., Rohr, M. K., & Williger, B. (2011). Modeling success in life-span psychology: The principles of selection, optimization, and compensation. *Handbook of life-span development*, 57-85.
- Latham, G. P., & Locke, E. A. (2007). New developments in and directions for goal-setting research. *European Psychologist*, 12, 290-300.
- LePine, J., Podsakoff, N. P., & Lepine, M. (2005). A Meta-Analytic Test of the Challenge Stressor-Hindrance Stressor Framework : An Explanation for Inconsistent Relationships Among Stressors and Performance | *Academy of Management Journal*.
- Lee, Y. H. (2019). Emotional labor, teacher burnout, and turnover intention in high-school physical education teaching. *European Physical Education Review*, 25(1), 236-253.
- Leggett, M., & Bunker, A. (2006). Teaching portfolios and university culture. *Journal of Further and Higher Education*, 30(3), 269-282.
- *Leite, L. O., Go, W., & Havu-Nuutinen, S. (2022). Exploring the learning process of experienced teachers focused on building positive interactions with pupils. *Scandinavian Journal of Educational Research*, 66(1), 28-42.

-
- Levy, S. R., & Macdonald, J. L. (2016). Progress on understanding ageism. *Journal of Social Issues*, 72(1), 5-25.
- Li, Z., Liu, M., & Zhu, J. (2025). Impact of Professional Competency on Occupational Identity of Preschool Education Publicly Funded Teacher Trainees: The Moderating Role of Support from Significant Others. *Sustainability*, 17(1), 242.
- Lieberman, A., & Pointer Mace, D. (2010). Making practice public: Teacher learning in the 21st century. *Journal of teacher education*, 61(1-2), 77-88.
- Lichtman, M. (2023). *Qualitative research in education: A user's guide*. Routledge.
- Lipscomb, S.T., Chandler, K.D., Abshire, C. et al. Early Childhood Teachers' Self-efficacy and Professional Support Predict Work Engagement. *Early Childhood Educ J* 50, 675–685 (2022).
- Little, T. D. (2024). *Longitudinal structural equation modeling*. Guilford Publications.
- Liu, J., Wang, K., Chen, Z., & Pan, Z. (2023). Exploring the contributions of job resources, job demands, and job self-efficacy to STEM teachers' job satisfaction: A commonality analysis. *Psychology in the Schools*, 60(1), 122-142.
- Liu, R. H. Y. (2024). Using a PDCA cycle to enhance the pedagogies for transdisciplinary values education: A case study of a Hong Kong primary school. In *Implementing a 21st Century Competency-Based Curriculum Through Lesson Study* (pp. 59-80). Routledge.
- Llopert, M., Serra, J. M., & Esteban-Guitart, M. (2018). Teachers' perceptions of the benefits, limitations, and areas for improvement of the funds of knowledge approach. A qualitative study. *Teachers and Teaching*, 24(5), 571-583.
- Lockwood, C., Munn, Z., & Porritt, K. (2015). Qualitative research synthesis: methodological guidance for systematic reviewers utilizing meta-aggregation. *JB I Evidence Implementation*, 13(3), 179-187.
- Loghman, S., Ramirez-Perez, M., Bohle, P., & Martin, A. (2025). A comprehensive meta-analysis of the impact of intervention programmes on psychological capital development: post-intervention and longer-term effects. *Personnel Review*, 54(1), 106-129.
- Lomas, T., Waters, L., Williams, P., Oades, L. G., & Kern, M. L. (2021). Third wave positive psychology: Broadening towards complexity. *The Journal of Positive Psychology*, 16(5), 660-674.
- Long, H. A., French, D. P., & Brooks, J. M. (2020). Optimising the value of the critical appraisal skills programme (CASP) tool for quality appraisal in qualitative evidence synthesis. *Research Methods in Medicine & Health Sciences*, 1(1), 31-42.
- Lord, R. G., Diefendorff, J. M., Schmidt, A. M., & Hall, R. J. (2010). Self-regulation at work. *Annual review of psychology*, 61, 543-568.
- Lorensen, L. C., & Ladd, H. F. (2020). The hidden costs of teacher turnover. *Aera Open*, 6(1), pp. 1-24.
- Lorente, L., Salanova, M., Martínez, I. M., & Vera, M. (2014). How personal resources predict work engagement and self-rated performance among construction workers: A social cognitive perspective. *International Journal of Psychology*, 49(3), 200-207.
- Lorente-Prieto, L., Soria, M. S., Martínez, I. M., & Schaufeli, W. (2008). Extension of the Job Demands-Resources model in the prediction of burnout and engagement among teachers over time. *Psicothema*, 354-360.

- Louws, M. L., Meirink, J. A., van Veen, K., & van Driel, J. H. (2017). Teachers' self-directed learning and teaching experience: What, how, and why teachers want to learn. *Teaching and teacher education*, 66, 171-183.
- Luthans, F. (2015). *Psychological capital and beyond*. Oxford University Press.
- Luthans, F., & Youssef-Morgan, C. M. (2017). Psychological capital: An evidence-based positive approach. *Annual review of organizational psychology and organizational behavior*, 4(1), 339-366.
- Lynn, S. (2002). The winding Path: Understanding the career cycle of teachers. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 75(4), 179-182.
- Lyons, A., Alba, B., Heywood, W., Fileborn, B., Minichiello, V., Barrett, C., ... & Dow, B. (2018). Experiences of ageism and the mental health of older adults. *Aging & mental health*, 22(11), 1456-1464.
- Lyubomirsky, S., & Layous, K. (2013). How do simple positive activities increase well-being?. *Current directions in psychological science*, 22(1), 57-62.
- Ma, Y. (2023). Boosting teacher work engagement: The mediating role of psychological capital through emotion regulation. *Frontiers in Psychology*, 14, 1240943.
- Madrid, S., & Dunn-Kenney, M. (2010). Persecutory guilt, surveillance and resistance: The emotional themes of early childhood educators. *Contemporary Issues in Early Childhood*, 11(4), 388-401.
- Maguire, M., & Delahunt, B. (2017). Doing a thematic analysis: A practical, step-by-step guide for learning and teaching scholars. *All Ireland journal of higher education*, 9(3).
- Mahfouz, J. (2018). Mindfulness training for school administrators: Effects on well-being and leadership. *Journal of Educational Administration*, 56(6), 602-619.
- Majid, U., & Vanstone, M. (2018). Appraising qualitative research for evidence syntheses: a compendium of quality appraisal tools. *Qualitative health research*, 28(13), 2115-2131.
- Mäkikangas, A., Feldt, T., Kinnunen, U., Tolvanen, A., & Kinnunen, M.-L. (2016). Long-term development of employee well-being: A latent transition approach. *Journal of Occupational Health Psychology*, 21(4), 439-457.
- Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: guided by information power. *Qualitative health research*, 26(13), 1753-1760.
- Marchiondo, L. A., Gonzales, E., & Williams, L. J. (2019). Trajectories of perceived workplace age discrimination and long-term associations with mental, self-rated, and occupational health. *The Journals of Gerontology: Series B*, 74(4), 655-663.
- Marcus, J. (2022). The essential role of intersectionality in the science of work and aging. *Work, Aging and Retirement*, 8(4), 358-360.
- Marcus, J., Fritzsche, B. A., Le, H., & Reeves, M. D. (2016). Validation of the work-related age-based stereotypes (WAS) scale. *Journal of Managerial Psychology*, 31(5), 989-1004.
- Marshall, C., & Rossman, G. B. (2014). *Designing qualitative research*. Sage publications.
- Maruta, R. (2012). Maximizing knowledge work productivity: a time constrained and activity visualized PDCA cycle. *Knowledge and process Management*, 19(4), 203-214.

-
- Matsuura, Y., & Yasui, T. (2025). Associations of menopausal symptoms with job-related stress and social support in Japanese school teachers. *Maturitas*, 191, 108152.
- Mauno, S., Ruokolainen, M., & Kinnunen, U. (2013). Does aging make employees more resilient to job stress? Age as a moderator in the job stressor–well-being relationship in three Finnish occupational samples. *Aging & mental health*, 17(4), 411-422.
- Maurer, T. J. (2001). Career-relevant learning and development, worker age, and beliefs about self-efficacy for development. *Journal of management*, 27(2), 123-140.
- Maxwell, J. (1992). Understanding and validity in qualitative research. *Harvard educational review*, 62(3), 279-301.
- Maxwell, J. A. (2013). *Qualitative research design: An interactive approach: An interactive approach*. sage.
- McGee, A.B., Scott, S.R., Manczak, E.M., & Watamura, S.E. (2023). Associations between biomarkers and the psychophysiological impacts of teacher occupation stress: a systematic review. *Psychoneuroimmunology Journal*, 2023.
- McGlynn-Stewart, M. E. (2015). Undergraduate Students' Perspectives on the Value of Peer-Led Discussions. *Canadian Journal for the Scholarship of Teaching and Learning*, 6(3), 9.
- McHugh, M. L. (2012). Interrater reliability: the kappa statistic. *Biochemia medica*, 22(3), 276-282.
- *Meister, D. G. (2010). Experienced Secondary Teachers' Perceptions of Engagement and Effectiveness: A Guide for Professional Development. *Qualitative Report*, 15(4), 880-898.
- Mejía, S. T., Ryan, L. H., Gonzalez, R., & Smith, J. (2017). Successful aging as the intersection of individual resources, age, environment, and experiences of well-being in daily activities. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 72(2), 279-289.
- Meldrum, J (2007). Teachers' engagement in change of practice : influencing teachers' engagement in changing professional practice : application of the transtheoretical model of change. CQUniversity. Chapter.
- Mertler, C. A. (2016). Should I stay or should I go? Understanding teacher motivation, job satisfaction, and perceptions of retention among Arizona teachers. *International Research in Higher Education*, 1(2), 34-45.
- Metzger, A., Duane, A., Nash, A., & Shapiro, V. (2024). “Putting Science into Action”: A Case Study of How an Educational Intermediary Organization Synthesizes and Translates Research Evidence for Practice. *International Journal of Education Policy and Leadership*, 20(1), 1-19.
- Meyers, M. C., & van Woerkom, M. (2017). Effects of a strengths intervention on general and work-related well-being: The mediating role of positive affect. *Journal of Happiness Studies*, 18, 671-689.
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & Prisma Group. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLoS Medicine*, 6(7), e1000097.
- *Monteiro, A., Mouraz, A., & Thomas Dotta, L. (2020). Veteran teachers and digital technologies: myths, beliefs and professional development. *Teachers and Teaching*, 26(7-8), 577-587.

- Montenegro, M., Balasch, M., & Pujol, J. (2023). A methodological proposal from situated knowledge epistemology: Narrative Productions. *Qualitative Research in Psychology*, 20(4), 542-551.
- *Morcom, V., & MacCallum, J. (2022). Mentoring experienced teachers to change their practice: A sociocultural perspective for professional learning and development. *Learning, Culture and Social Interaction*, 34, 100627.
- Mori, K., Odagami, K., Inagaki, M., Moriya, K., Fujiwara, H., & Eguchi, H. (2024). Work engagement among older workers: a systematic review. *Journal of Occupational Health*, 66(1), uiad008.
- Mosley, K. C., Playfair, E. C., Weppner, C. H., Balat, A., & McCarthy, C. J. (2023). 'The bread and butter of a difficult profession': mentoring as a resource for teacher stress. *Teachers and Teaching*, 29(1), 20-36.
- Moustakas, C. (1994). Phenomenological research methods. Thousand Oaks, CA: Sage.
- Msangi, S. M., Matoka, C., & Dominic, T. (2024). Effect of Personal Resources on Turnover Intentions in Food and Beverage Manufacturing Micro and Small Enterprises in Dar es Salaam Tanzania. *Pan-African Journal of Business Management*, 8(2), 121-142.
- Mu, G. M., Gordon, D., Liang, J., Zhao, L., Alonso, R. A., Juri, M. Z., ... & Xing, C. (2024). A meta-analysis of the correlation between teacher self-efficacy and teacher resilience: Concerted growth and contextual variance. *Educational research review*, 100645.
- Müller, A., Heiden, B., Herbig, B., Poppe, F., & Angerer, P. (2016). Improving well-being at work: A randomized controlled intervention based on selection, optimization, and compensation. *Journal of Occupational Health Psychology*, 21(2), 169.
- Murwanto, P. (2024). Developing and practicing inclusive leadership in schools. *Progres pendidikan*, 5(1), 93-100.
- Myin-Germeys, I., Kasanova, Z., Vaessen, T., Vachon, H., Kirtley, O., Viechtbauer, W., & Reininghaus, U. (2018). Experience sampling methodology in mental health research: new insights and technical developments. *World Psychiatry*, 17(2), 123-132.
- Nagy, N., Fasbender, U., & North, M. S. (2019). Youthfuls, matures, and veterans: Subtyping subjective age in late-career employees. *Work, Aging and Retirement*, 5(4), 307-322.
- Näring, G., Briët, M., & Brouwers, A. (2006). Beyond demand-control: Emotional labour and symptoms of burnout in teachers. *Work & Stress*, 20(4), 303-315.
- National Commission on Teaching and America's Future. (1996). What matters most: Teaching for America's future. Washington, DC: Author.
- Navarrete, E., Nehring, A., Schanze, S., Ewerth, R., & Hoppe, A. (2025). A closer look into recent video-based learning research: A comprehensive review of video characteristics, tools, technologies, and learning effectiveness. *International Journal of Artificial Intelligence in Education*, 1-64.
- Negrin, K. A., Slaughter, S. E., Dahlke, S., & Olson, J. (2022). Successful recruitment to qualitative research: A critical reflection. *International Journal of Qualitative Methods*, 21, 1-12.
- Newton, N. J., & Ottley, K. M. (2021). Work-related choice and identity in older women. In E. Cole & L. Hollis-Sawyer (Eds.), *Older women who work: Resilience, choice, and change* (pp. 69-86). American Psychological Association.

-
- Ng, T. W., & Feldman, D. C. (2012). Evaluating six common stereotypes about older workers with meta-analytical data. *Personnel psychology*, 65(4), 821-858.
- Nichols, S. L., & Berliner, D. C. (2007). *Collateral damage: How high-stakes testing corrupts America's schools*. Harvard Education Press.
- Nilsson, K. (2016). Conceptualisation of ageing in relation to factors of importance for extending working life—a review. *Scandinavian Journal of Public Health*, 44(5), 490-505.
- North, M. S., & Fiske, S. T. (2013). Act your (old) age: Prescriptive, ageist biases over succession, consumption, and identity. *Personality and Social Psychology Bulletin*, 39(6), 720-734.
- North, M. S., Fiske, S. T., & Nelson, T. D. (2017). Succession, consumption, and identity: Prescriptive ageism domains. *Ageism: Stereotyping and prejudice against older persons*, 77-104.
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods*, 16(1).
- Ntoumanis, N., Thørgersen-Ntoumani, C., Quested, E., & Chatzisarantis, N. (2018). *Theoretical approaches to physical activity promotion*. In Oxford research encyclopedia of psychology.
- Nwoko, J. C., Emeto, T. I., Malau-Aduli, A. E., & Malau-Aduli, B. S. (2023). A systematic review of the factors that influence teachers' occupational wellbeing. *International journal of environmental research and public health*, 20(12), 6070.
- Obéniche, J. B. (2011). Allongement de la vie professionnelle : comment agir [Extending working life: how to take action]. *Revue Travail et changement*, 337.
- Organization for Economic Co-operation and Development. (2013). Teaching and Learning International Survey (TALIS) Conceptual framework.
- Organization for Economic Co-operation and Development. (2019). Education at a glance 2019: OECD Indicators. OECD Publishing.
- Organization for Economic Co-operation and Development. (2020). Teachers and school leaders as valued professionals: Status, roles and working conditions. OECD Publishing. <https://doi.org/10.1787/19cf08df-en>
- Organization for Economic Co-operation and Development. (2021). Education at a glance 2021: OECD Indicators, OECD Publishing.
- Organization for Economic Cooperation and Development. (2022). OECD: Statistical distribution of teachers by age and gender.
- Organization for Economic Co-operation and Development (2025). Trends shaping education 2025. OECD Publishing, Paris. Available online: https://www.oecd.org/en/publications/trends-shaping-education-2025_ee6587fd-en.html
- Orland-Barak, L. (2014). Mind the gap: teacher learning, teacher development, and teacher inquiry. *Teachers and Teaching*, 20(6), 667-671.
- Ortan, F., Simut, C., & Simut, R. (2021). Self-efficacy, job satisfaction and teacher well-being in the K-12 educational system. *International journal of environmental research and public health*, 18(23), 12763.
- Osborne, J. F., Borko, H., Fishman, E., Gomez Zaccarelli, F., Berson, E., Busch, K. C., ... & Tseng, A. (2019). Impacts of a practice-based professional development program

- on elementary teachers' facilitation of and student engagement with scientific argumentation. *American educational research journal*, 56(4), 1067-1112.
- Owen, S. (2016). Professional learning communities: Building skills, reinvigorating the passion, and nurturing teacher well-being and "flourishing" within significantly innovative schooling contexts. *Educational review*, 68(4), 403-419.
- Ozamiz-Etxebarria, N., Legorburu Fernnandez, I., Lipnicki, D. M., Idoiaga Mondragon, N., & Santabábara, J. (2023). Prevalence of burnout among teachers during the COVID-19 pandemic: a meta-analysis. *International journal of environmental research and public health*, 20(6), 4866.
- Ozolins, U., Hale, S., Cheng, X., Hyatt, A., & Schofield, P. (2020). Translation and back-translation methodology in health research—a critique. *Expert review of pharmacoeconomics & outcomes research*, 20(1), 69-77.
- Papadakis, N., & Drakaki, M. (2023). The development of the European education policy, its reform agenda and the impact of neoliberalism and economic rationale: The case of the "Work Programme Education & Training 2010", within the framework of the EU Lisbon strategy (2000–2010). *International Journal of Educational Research*, 117, 102130.
- Park, C. U., & Kim, H. J. (2015). Measurement of inter-rater reliability in systematic review. *Hanyang Medical Reviews*, 35(1), 44-49.
- Park, I. J., Rie, J., Kim, H. S., & Park, J. (2020). Effects of a future time perspective-based career intervention on career decisions. *Journal of Career Development*, 47(1), 96-110.
- Parker, C., Scott, S., & Geddes, A. (2019). Snowball sampling. *SAGE research methods foundations*.
- Parsons, A. W., Ankrum, J. W., & Morewood, A. (2016). Professional development to promote teacher adaptability. *Theory Into Practice*, 55(3), 250-258.
- Patfield, S., J. Gore, and J. Harris. 2022. "Scaling Up Effective Professional Development: Toward Successful Adaptation Through Attention to Underlying Mechanisms." *Teaching and Teacher Education* 116:103756. .
- Patton, M. Q. (2002). Two decades of developments in qualitative inquiry: A personal, experiential perspective. *Qualitative social work*, 1(3), 261-283.
- Pearson, A., White, H., Bath-Hextall, F., Salmond, S., Apostolo, J., & Kirkpatrick, P. (2015). A mixed-methods approach to systematic reviews. *International Journal of Evidence-based Healthcare*, 13(3), 121–131.
- Pekrun, R., & Linnenbrink-Garcia, L. (2012). Academic emotions and student engagement. In *Handbook of research on student engagement* (pp. 259-282). Boston, MA: Springer US.
- Penuel, W. R., & Gallagher, D. J. (2017). *Creating Research-Practice Partnerships in Education*. Harvard Education Press. 8 Story Street First Floor, Cambridge, MA 02138.
- Pickering, C., & Byrne, J. (2014). The benefits of publishing systematic quantitative literature reviews for PhD candidates and other early-career researchers. *Higher Education Research & Development*, 33(3), 534–548.
- Pirard, F., Sharmahd, N., Van Laere, K., Peleman, B., Reinertz, C., & Backers, J. (2024). Belgium–ECEC Workforce Profile. *Early childhood workforce profiles across Europe. 33 country reports with key contextual data*.

-
- Polit, D. F., & Beck, C. T. (2010). Generalization in quantitative and qualitative research: Myths and strategies. *International journal of nursing studies*, 47(11), 1451-1458.
- Ponce, O. A., & Pagán-Maldonado, N. (2015). Mixed methods research in education: Capturing the complexity of the profession. *International journal of educational excellence*, 1(1), 111-135.
- Portela Pruaño, A., Bernárdez Gómez, A., Marrero Galvan, J. J., & Nieto Cano, J. M. (2022). Intergenerational professional development and learning of teachers: A mixed methods study. *International Journal of Qualitative Methods*, 21, 16094069221133233.
- Poscia, A., Moscato, U., La Milia, D. I., Milovanovic, S., Stojanovic, J., Borghini, A., ... & Magnavita, N. (2016). Workplace health promotion for older workers: a systematic literature review. *BMC health services research*, 16, 415-428.
- Postholm, M. B. (2012). Teachers' professional development: A theoretical review. *Educational research*, 54(4), 405-429.
- Posthuma, R. A., & Campion, M. A. (2009). Age stereotypes in the workplace: Common stereotypes, moderators, and future research directions. *Journal of management*, 35(1), 158-188.
- Posthuma, R. A., Wagstaff, M. F., & Campion, M. A. (2012). 16 age stereotypes and workplace age discrimination. *The Oxford handbook of work and aging*, 298.
- Pozas, M., Letzel-Alt, V., & Schwab, S. (2022). The effects of differentiated instruction on teachers' stress and job satisfaction. *Teaching and Teacher Education*, 117, 103813.
- Pressley, T. (2021). Factors contributing to teacher burnout during COVID-19. *Educational Researcher*, 50(5), 325-327.
- Prochaska, J. O., & DiClemente, C. C. (1982). Stages and processes of self-change of smoking: toward an integrative model of change. *Journal of consulting and clinical psychology*, 51(3), 390.
- Prochaska, J. O., & Prochaska, J. M. (2019). Transtheoretical model. In *Lifestyle Medicine*, Third Edition (pp. 219-228). CRC Press.
- Prochaska, J. O., Norcross, J. C., & DiClemente, C. C. (1994). *Changing for good* (pp. 40-56). New York: Avon Books.
- Prochaska, J. O., Velicer, W. F., Redding, C., Rossi, J. S., Goldstein, M., DePue, J., ... & Plummer, B. A. (2005). Stage-based expert systems to guide a population of primary care patients to quit smoking, eat healthier, prevent skin cancer, and receive regular mammograms. *Preventive medicine*, 41(2), 406-416.
- Proyer, R. T., Gander, F., Wellenzohn, S., & Ruch, W. (2015). Strengths-based positive psychology interventions: A randomized placebo-controlled online trial on long-term effects for a signature strengths-vs. a lesser strengths-intervention. *Frontiers in psychology*, 6, 456.
- Raduan, N. A., & Na, S. I. (2020). An integrative review of the models for teacher expertise and career development. *European Journal of Teacher Education*, 43(3), 428-451.
- Raemdonck, I., Beusaert, S., Van der Heijden, B. I., & Segers, M. (2022). Sustainable employability of teaching staff members? A multiple-group path analysis of the role of age, self-directed learning orientation and job characteristics for employability. *Vocations and Learning*, 15(3), 497-530.
- Rahm, T., & Heise, E. (2019). Teaching happiness to teachers-development and evaluation of a training in subjective well-being. *Frontiers in psychology*, 10, 2703.

- Rajiur Rahman, M., Subhlok, J., & Shah, S. (2020). Visual Summarization of Lecture Video Segments for Enhanced Navigation. arXiv e-prints, arXiv-2006.
- Randall, K., Kwon, K. A., Ford, T. G., & Malek-Lasater, A. (2023). Physical Well-being in Early Childhood Teachers: Correlates of Work-related Musculoskeletal Issues and Fitness among these “Educational Athletes”. *Early Education and Development*, 34(2), 551-571.
- Reis, D., Hoppe, A., & Schröder, A. (2015). Reciprocal relationships between resources, work and study engagement, and mental health: Evidence for gain cycles. *European Journal of Work and Organizational Psychology*, 24, 59–75.
- Rethlefsen, M. L., Kirtley, S., Waffenschmidt, S., Ayala, A. P., Moher, D., Page, M. J., & Koffel, J. B. (2021). PRISMA-S: an extension to the PRISMA statement for reporting literature searches in systematic reviews. *Systematic reviews*, 10, 1-19.
- Richardson, J. T. (2011). Eta squared and partial eta squared as measures of effect size in educational research. *Educational research review*, 6(2), 135-147.
- *Robinson, J. (2020). Australian super veteran secondary school music teachers: Motivated and valuable. *International Journal of Music Education*, 38(2), 226-239.
- Robson Jr, J. P., & Troutman-Jordan, M. (2014). A concept analysis of cognitive reframing. *Journal of Theory Construction & Testing*, 18(2).
- Rogerson, O., Wilding, S., Prudenzi, A., & O'Connor, D. B. (2024). Effectiveness of stress management interventions to change cortisol levels: A systematic review and meta-analysis. *Psychoneuroendocrinology*, 159, 106415.
- Romain, A. J., Bortolon, C., Gourlan, M., Carayol, M., Decker, E., Lareyre, O., ... & Bernard, P. (2018). Matched or nonmatched interventions based on the transtheoretical model to promote physical activity. A meta-analysis of randomized controlled trials. *Journal of Sport and Health Science*, 7(1), 50-57.
- Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American educational research journal*, 50(1), 4-36.
- Rosenberg, M. W., Cheng, Y., Prieto-Flores, M. E., & Braimah, J. A. (2024). Non-Western perspectives on aging and place. In *Handbook on Aging and Place* (pp. 101-119). Edward Elgar Publishing.
- Rudolph, C. W., & Zacher, H. (2017). Considering generations from a lifespan developmental perspective. *Work, Aging and Retirement*, 3(2), 113-129.
- Ruiz Zorrilla, P., Hernández Oñativia, X., Barrón López de Roda, A., Antino, M., & Rodríguez Muñoz, A. (2020). Exploring daily patterns of work engagement among teachers: A latent growth modeling approach. *Psicothema*, 32(3), 374-381.
- Saloviita, T., & Pakarinen, E. (2021). Teacher burnout explained: Teacher-, student-, and organisation-level variables. *Teaching and teacher education*, 97, 103221.
- Samfira, E. M., & Paloş, R. (2021). Teachers' personality, perfectionism, and self-efficacy as predictors for coping strategies based on personal resources. *Frontiers in psychology*, 12, 751930.
- Sancar, R., Atal, D., & Deryakulu, D. (2021). A new framework for teachers' professional development. *Teaching and teacher education*, 101, 103305.
- Sandelowski, M., Voils, C. I., Leeman, J., & Crandell, J. L. (2012). Mapping the mixed methods–mixed research synthesis terrain. *Journal of Mixed Methods Research*, 6(4), 317–331.

-
- Schaack, D. D., Le, V. N., & Stedron, J. (2020). When fulfillment is not enough: Early childhood teacher occupational burnout and turnover intentions from a job demands and resources perspective. *Early Education and Development*, 31(7), 1011-1030.
- Schaubman, A., Stetson, E., & Plog, A. (2011). Reducing teacher stress by implementing collaborative problem solving in a school setting. *School Social Work Journal*, 35(2), 72-93.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 25(3), 293-315.
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2003). Utrecht work engagement scale-9. *Educational and Psychological Measurement*.
- Scheibe, S., Yeung, D. Y., & Doerwald, F. (2019). Age-related differences in levels and dynamics of workplace affect. *Psychology and Aging*, 34(1), 106.
- Schloegel, U., Stegmann, S., Maedche, A., & Van Dick, R. (2016). Reducing age stereotypes in software development: The effects of awareness-and cooperation-based diversity interventions. *Journal of Systems and Software*, 121, 1-15.
- Schoemann, A. M., & Branscombe, N. R. (2011). Looking young for your age: Perceptions of anti-aging actions. *European Journal of Social Psychology*, 41(1), 86-95.
- Schmidt, J. A., Rosenberg, J. M., & Beymer, P. N. (2018). A person-in-context approach to student engagement in science: Examining learning activities and choice. *Journal of Research in Science Teaching*, 55(1), 19-43.
- Schuck, S., Aubusson, P., Buchanan, J., Varadharajan, M., & Burke, P. F. (2018). The experiences of early career teachers: New initiatives and old problems. *Professional development in education*, 44(2), 209-221.
- Scott, J. C. (2006). The mission of the university : Medieval to postmodern transformation. *Journal of Higher Education*, 77(1), 1-39.
- See, B. H., Morris, R., Gorard, S., Kokotsaki, D., & Abdi, S. (2020). Teacher recruitment and retention: A critical review of international evidence of most promising interventions. *Education Sciences*, 10(10), 262.
- Segan, C. J., Borland, R., & Greenwood, K. M. (2006). Can transtheoretical model measures predict relapse from the action stage of change among ex-smokers who quit after calling a quitline?. *Addictive behaviors*, 31, 414-428.
- Seidel, J. (2012). Transferkompetenz und Transfer: Theoretische und empirische Untersuchung zu den Wirksamkeitsbedingungen betrieblicher Weiterbildung [Transfer competence and transfer. A theoretical and empirical analysis of the conditions affecting effectiveness in further education] (Vol. 3). BoD-Books on Demand.
- Seidman, I. (2012) Interviewing as qualitative research: A guide for researchers in education and the social sciences. Teachers college press, 15-27.
- Seitz, S. (2016). Pixilated partnerships, overcoming obstacles in qualitative interviews via Skype: A research note. *Qualitative research*, 16(2), 229-235.
- Seldin, P. (1997). Teaching portfolio. A practical guide to improve performance and promotion/tenure decisions. Bolton, MA : Anker.
- Shao, L., Yu, G., & Zhang, D. (2022). The mechanisms underlying the negative effect of depression on life satisfaction among the elderly: the roles of ostracism and economic income. *International Psychogeriatrics*, 34(8), 715-724.

- Sholokhova, S., Bizzari, V., & Fuchs, T. (2022). Exploring phenomenological interviews: questions, lessons learned and perspectives. *Phenomenology and the Cognitive Sciences*, 21(1), 1-7.
- Sikes, P. (2004). Teachers' lives and teaching performance. In *The Performing School* (pp. 86-100). Routledge.
- Skaalvik, E. M., & Skaalvik, S. (2014). Teacher self-efficacy and perceived autonomy: Relations with teacher engagement, job satisfaction, and emotional exhaustion. *Psychological Reports*, 114, 68-77.
- Skaalvik, E. M., & Skaalvik, S. (2017). Motivated for teaching? Associations with school goal structure, teacher self-efficacy, job satisfaction and emotional exhaustion. *Teaching and Teacher Education*, 67, 152-160.
- Skaalvik, E. M., & Skaalvik, S. (2018). Job demands and job resources as predictors of teacher motivation and well-being. *Social Psychology of Education*, 21(5), 1251-1275.
- Skinner, E., & Beers, J. (2016). Mindfulness and teachers' coping in the classroom: A developmental model of teacher stress, coping, and everyday resilience. *Handbook of mindfulness in education: Integrating theory and research into practice*, 99-118.
- Skinner, E. A., & Pitzer, J. R. (2012). Developmental dynamics of student engagement, coping, and everyday resilience. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 21-44). Boston, MA: Springer US.
- Smet, K., Grosemans, I., De Cuyper, N., & Kyndt, E. (2022). Outcomes of informal work-related learning behaviours: A systematic literature review. *Scandinavian journal of work and organizational psychology*, 7(1), 1-18.
- Smith S., Lawrence S. M. (2019). Early care and education teacher well-being: Associations with children's experience, outcomes, and workplace conditions: A research-to-policy brief. - Accessed on May 20, 2025
- Smith, B., & McGannon, K. (2023). Co-production and impact: Challenges and opportunities. *N. Denzin, Y. Lincoln, M. Giardina, & G. Cannella, The Sage Handbook of Qualitative Research*, 535-548.
- Smith, K., & Tillema, H. (2006). *Portfolios for professional development : A research journey*. New York, NY : Nova Science Publishers Inc.
- *Snow-Gerono, J. L. (2009). Voices Less Silenced: What do Veteran Teachers Value in School-University Partnerships and Initial Teacher Preparation?. *The Teacher Educator*, 44(4), 248-267.
- Sokal, L., Trudel, L. E., & Babb, J. (2020). Canadian teachers' attitudes toward change, efficacy, and burnout during the COVID-19 pandemic. *International Journal of Educational Research Open*, 1, 100016.
- Sonnentag, S. (2015). Dynamics of well-being. *Annu. Rev. Organ. Psychol. Organ. Behav.*, 2(1), 261-293.
- Soykan, A., Gardner, D., & Edwards, T. (2019). Subjective well-being in New Zealand teachers: An examination of the role of psychological capital. *Journal of Psychologists and Counsellors in Schools*, 29(2), 130-138.
- Stang-Rabrig, J., Brüggemann, T., Lorenz, R., & McElvany, N. (2022). Teachers' occupational well-being during the COVID-19 pandemic: The role of resources and demands. *Teaching and Teacher Education*, 103803.

-
- Starks, H., & Trinidad, S. B. (2007). Choose Your Method: A Comparison of Phenomenology, Discourse Analysis, and Grounded Theory. *Qualitative Health Research*, 17(10), 1372–1380.
- Sultana, N., & Aurangzeb, W. (2022). Effect of Job Stress on Job Burnout of Early Childhood Education Teachers. *Global Social Sciences Review*, VII(III), 32–40.
- Suryani, A., & Widyastuti, T. (2015). The role of teachers' experiential learning and reflection for enhancing their autonomous personal and professional development. *Jurnal Sosial Humaniora (JSH)*, 8(1), 1-22.
- Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). A coming crisis in teaching? Teacher supply, demand, and shortages in the US. Learning Policy Institute.
- Sykes, P. (2004). Teachers' lives and teaching performance. In D. Gleason & C. Husbands (Eds.), *The performing school* (pp. 86–100). Routledge.
- Taris, T. W., Bok, I. A., & Caljé, D. G. (1998). On the relation between job characteristics and depression: A longitudinal study. *International Journal of Stress Management*, 5, 157-167.
- Taylor, L. (2005, décembre). The Scholarship of Teaching and Learning: Building knowledge about learning and teaching in our disciplines. Séminaire de la Chaire Unesco de pédagogie universitaire (CPU), Louvain-la-Neuve.
- Taylor, P. J., Russ-Eft, D. F., & Chan, D. W. L. (2005). A meta-analytic review of behavior modeling training. *Journal of Applied Psychology*, 90, 692–709.
- Taylor, P., & Earl, C. (2016). The social construction of retirement and evolving policy discourse of working longer. *Journal of Social Policy*, 45(2), 251-268.
- Tejada-Gallardo, C., Blasco-Belled, A., Torrelles-Nadal, C., & Alsinet, C. (2020). Effects of school-based multicomponent positive psychology interventions on well-being and distress in adolescents: A systematic review and meta-analysis. *Journal of youth and adolescence*, 49(10), 1943-1960.
- Tempest, S. (2003). Intergenerational learning: A reciprocal knowledge development process that challenges the language of learning. *Management learning*, 34(2), 181-200.
- Thorpe, K., Jansen, E., Sullivan, V., Irvine, S., & McDonald, P. (2020). Identifying predictors of retention and professional well-being of the early childhood education workforce in a time of change. *Journal of Educational Change*, 21, 623-647.
- Thijssen, J., & Rocco, T. (2010). Development of older workers: revisiting policies. *Working and ageing: emerging theories and empirical perspectives. Luxembourg: Publications Office of the European Union.*
- Timmons, A. C., & Preacher, K. J. (2015). The importance of temporal design: How do measurement intervals affect the accuracy and efficiency of parameter estimates in longitudinal research? *Multivariate Behavioral Research*, 50(4), 409–423.
- Tomamichel, S. (2003). La recherche empirique en éducation, in G. Le Bouëdec, S. Tomamichel, *Former à la recherche en éducation et formation*, Paris: L'Harmattan.
- Tonhäuser, C., & Büker, L. (2016). Determinants of transfer of training: A comprehensive literature review. *International journal for research in vocational education and training*, 3(2), 127-165.
- Torenbeek, M., & Peters, V. (2017). Explaining attrition and decreased effectiveness of experienced teachers: A research synthesis. *Work*, 57(3), 397-407.

- Tracy, S. J. (2010). Qualitative quality: Eight “big-tent” criteria for excellent qualitative research. *Qualitative inquiry*, 16(10), 837-851.
<https://doi.org/10.1177/1077800410383121>
- Trust, T., & Whalen, J. (2021). Emergency remote teaching with technology during the COVID-19 pandemic: Using the whole teacher lens to examine educator’s experiences and insights. *Educational Media International*, 58(2), 145-160.
- Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and teacher education*, 17(7), 783-805.
- Turner, K., Thielking, M., & Meyer, D. (2021). Teacher wellbeing, teaching practice and student learning. *Issues in educational research*, 31(4), 1293-1311.
- van Agteren, J., Iasiello, M., Lo, L., Bartholomaeus, J., Kopsaftis, Z., Carey, M., & Kyrios, M. (2021). A systematic review and meta-analysis of psychological interventions to improve mental well-being. *Nature human behaviour*, 5(5), 631-652.
- Vanblaere, B., & Devos, G. (2016). Relating school leadership to perceived professional learning community characteristics: A multilevel analysis. *Teaching and teacher education*, 57, 26-38.
- Van den Heuvel, M., Demerouti, E., Bakker, A. B., & Schaufeli, W. B. (2010). Personal resources and work engagement in the face of change. *Contemporary occupational health psychology: Global perspectives on research and practice*, 1, 124-150.
- van Der Heijden, B. I. J. M. (2006). Age differences in career activities among higher-level employees in the Netherlands : A comparison between profit sector and non-profit sector staff. *International Journal of Training and Development*, 10(2), 98-120.
- van der Heijden, B. I. J. M., van Vuuren, T. C. V., Kooij, D. T. A. M., & de Lange, A. H. (2015). Tailoring professional development for teachers in primary education: The role of age and proactive personality. *Journal of Managerial Psychology*, 30(1), 22-37. doi: 10.1108/JMP-07-2014-0211
- Van der Heijden, B. I., Van Vuuren, T. C., Kooij, D. T., & de Lange, A. H. (2015). Tailoring professional development for teachers in primary education: The role of age and proactive personality. *Journal of managerial psychology*, 30(1), 22-37.
- Vanderlinde, R., & Van Braak, J. (2010). The gap between educational research and practice: Views of teachers, school leaders, intermediaries and researchers. *British educational research journal*, 36(2), 299-316.
- van der Want, A. C., Schellings, G. L. M., & Mommers, J. (2018). Experienced teachers dealing with issues in education: a career perspective. *Teachers and Teaching*, 24(7), 802-824.
- Vangrieken, K., Meredith, C., Packer, T., & Kyndt, E. (2017). Teacher communities as a context for professional development: A systematic review. *Teaching and teacher education*, 61, 47-59.
- van Woerkom, M., Kooij, D., & Kanfer, R. (2023). Growth motives and learning behaviors among older workers: toward a more comprehensive assessment. *Human Resource Development Review*, 22(4), 524-553.
- van Wingerden, J., Bakker, A. B., & Derks, D. (2017). The longitudinal impact of a job crafting intervention. *European Journal of Work and Organizational Psychology*, 26(1), 107-119.
- Van Wingerden, J., Derks, D., Bakker, A. B., & Dorenbosch, L. (2013). Job crafting in schools for special education: A qualitative analysis. *Gedrag en Organisatie*, 26(1), 85-103.

-
- van Zyl, L. E., Van Vuuren, H. A., Roll, L. C., & Stander, M. W. (2023). Person-environment fit and task performance: exploring the role (s) of grit as a personal resource. *Current Psychology*, 42(27), 23560-23579.
- Vogt, K., Hakanen, J. J., Jenny, G. J., & Bauer, G. F. (2016). Sense of coherence and the motivational process of the job-demands-resources model. *Journal of Occupational Health Psychology*, 21(2), 194.
- Voss, P., Bodner, E., & Rothermund, K. (2018). Ageism: The relationship between age stereotypes and age discrimination. *Contemporary perspectives on ageism*, 11-31.
- Walker, J. D., Baeppler, P., & Cohen, B. (2008). The scholarship of Teaching and Learning Paradox: Results, Methods, Rewards. *College Teaching*, 56(3), 183-189.
- Walsh, T. (2022). 'Promoted widely but not valued': Teachers' perceptions of team teaching as a form of professional development in post-primary schools in Ireland. *Professional Development in Education*, 48(4), 688-704.
- Wang, Z., Fu, J., & Bai, W. (2024). Public management approaches to an aging workforce: organizational strategies for strategies for adaptability and efficiency. *Frontiers in Psychology*, 15, 1439271.
- Wang, H. J., Lu, C. Q., & Siu, O. L. (2015). Job insecurity and job performance: The moderating role of organizational justice and the mediating role of work engagement. *Journal of Applied Psychology*, 100, 1249-1258.
- Ward, M. R., & Delamont, S. (2022). *Handbook of Qualitative Research in Education*. Edward Elgar Publishing: Cheltenham, UK
- Webb, A. S., & Welsh, A. J. (2019). Phenomenology as a methodology for scholarship of teaching and learning research. *Teaching and Learning Inquiry*, 7(1), 168-181.
- Wenger-Trayner, E., Wenger-Trayner, B., & Wenger-Trayner, C. (2015). Communities of practice: A brief introduction. - Accessed May 20, 2025
- Weston, C., & McAlpine, L. (2001). Making explicit the development toward the scholarship of teaching. *New Directions for Teaching & Learning*, (86), 89-98.
- Westphal, A., Kalinowski, E., Hoferichter, C. J., & Vock, M. (2022). K- 12 teachers' stress and burnout during the COVID-19 pandemic: A systematic review. *Frontiers in psychology*, 13, 920326.
- Wilckens, M. R., Wöhrmann, A. M., Deller, J., & Finsel, J. (2023). Health and the intention to retire: exploring the moderating effects of human resources practices. *The International Journal of human resource management*, 34(18), 3520-3554.
- Wilckens, M. R., Wöhrmann, A. M., Deller, J., & Wang, M. (2021). Organizational practices for the aging workforce: Development and validation of the Later Life Workplace Index. *Work, Aging and Retirement*, 7(4), 352-386.
- Wilson, D., Plesko, C., Brockie, T. N., & Glass, N. (2023). The well-being of head start teachers: a scoping literature review. *Journal of early childhood teacher education*, 44(4), 747-772.
- Wolf, F., Sandner, P., & Welp, I. M. (2014). Why do responses to age-based marketing stimuli differ? The influence of retirees' group identification and changing consumption patterns. *Psychology & Marketing*, 31(10), 914-931.
- Wolverson, C., Krusen, N., & Hunt, L. (2015) Ageing, disability and work. In: Wolverson, Caroline and Hunt, Linda, (eds.) *Work and the Older Person: Increasing Longevity and Well-being*. Slack, pp. 49-62
- Woodside, A. G., & Wilson, E. J. (2003). Case study research methods for theory building. *Journal of business & industrial marketing*, 18(6/7), 493-508.

- World Health Organization. (2015). World Report on Ageing and Health. Geneva, Switzerland: World Health Organization. Available at
- World Health Organization. (2023). Progress report on the United Nations decade of healthy ageing, 2021-2023. World Health Organization.
- Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of management review*, 26(2), 179-201.
- Wu, J., Ghayas, S., Aziz, A., Adil, A., & Niazi, S. (2024). *Relationship between teachers' professional identity and career satisfaction among college teachers: role of career calling*. *Frontiers in Psychology*, 15, 1348217.
- Xanthopoulou, D., & Bakker, A. B. (2021). Antecedents and consequences of work engagement: A multilevel nomological net. In *A research agenda for employee engagement in a changing world of work* (pp. 37-51). Edward Elgar Publishing.
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management*, 14(2), 121-141.
- Xie, K., Vongkulluksn, V. W., Heddy, B. C., & Jiang, Z. (2023). Experience sampling methodology and technology: an approach for examining situational, longitudinal, and multi-dimensional characteristics of engagement. *Educational technology research and development*, 1-31.
- Zacher, H., & Frese, M. (2009). Remaining time and opportunities at work: relationships between age, work characteristics, and occupational future time perspective. *Psychology and Aging*, 24(2), 487-493.
- Zauchner-Studnicka, S. A. (2017). A model for reverse-mentoring in education. *International Journal of Educational and Pedagogical Sciences*, 11(3), 551-558.
- Zeichner, K. M. (2010). Rethinking the connections between campus courses and field experiences in college- and university-based teacher education. *Journal of Teacher Education*, 61(1-2), 89-99.
- Zhang, F., & Parker, S. K. (2019). Reorienting job crafting research: A hierarchical structure of job crafting concepts and integrative review. *Journal of Organizational Behavior*, 40(2), 126-146.
- Zhang, S., Shi, Q., & Lin, E. (2020). Professional development needs, support, and barriers: TALIS US new and veteran teachers' perspectives. *Professional Development in Education*, 46(3), 440-453.
- Zirkel, S., Garcia, J. A., & Murphy, M. C. (2015). Experience-sampling research methods and their potential for education research. *Educational researcher*, 44(1), 7-16.
- .

Appendices

Appendix A

Contextual background framing LCT in a changing world: Demographic, policy, and workplace perspectives

As global populations age, the demographic shift towards an older workforce presents complex challenges for economic sustainability, markets, and pension systems. Rising old-age dependency ratios strain public resources, while declining working-age populations heighten concerns over productivity and workforce renewal. In response, policy interventions across national and international contexts have promoted active ageing, extended working lives, and enhanced employability through lifelong learning and workplace adaptation. However, reforms alone cannot fully capture the lived experience of ageing in the workplace, which is shaped by intersecting social, organisational, and biological factors.

Older employees often navigate a combination of physiological changes, evolving work demands, and age-based stereotypes that may constrain professional opportunities and well-being. While experience and expertise remain valuable assets, age-related assumptions about adaptability and performance persist in many organisational cultures, influencing access to training, promotion, and social recognition. These issues are particularly salient in physically and emotionally demanding professions such as teaching, where late-career educators face heightened expectations, limited career mobility, and increasing cognitive and emotional workloads. In early childhood education especially, the intersection of high job demands, and age-related challenges raises important questions about career sustainability and engagement. This chapter concludes by presenting the broader context of this doctoral research, situated within the French-speaking community of Belgium (FWB), where these dynamics are examined in depth.

1. The “Silver tsunami”: Global aging trends and implications

Over the last decade, global demographic developments have led to an increasing prevalence of midlife and older workers across the world (OECD, 2019). Often referred to as the “Silver Tsunami”, population aging represents a distinctive phenomenon in human demographic history spanning the last eight millennia (Jakovljevic et al., 2021). According to the United Nations demographic data (2017), an unprecedented threshold in history was reached where the proportion of senior citizens continued to grow while the proportion of child diminished. This aging trend results from multiple interconnected factors, rooted in significant societal changes beginning with the First Industrial revolution of the 1740s, and a complex demographic transition that remained unrecognized until the late Cold War era. First, advancements in early childhood survival have significantly extended human longevity.

Innovation in modern medical technology have driven increased public demands for advanced diagnostics, treatment, and rehabilitation procedures (Fehr et al., 2008). As a result, global life expectancy rose from 48.1 years in the 1950s to 70.5 years for men and from 52.9 years to 75.6 years for women by 2017 (Dicker et al., 2018). The combined effects of extended life expectancy and declining fertility rates have led to an increase in the median age of most contemporary societies, many of which are now nearing or slightly exceeding the 40-year mark (OECD, 2019). By 2050, citizens aged 60 and older are projected to constitute 22% of the global population (World Health Organization, 2015). Second, a significant and sustained decline in female fertility has resulted from the interplay of the sexual revolution, increased female education, and greater participation of women in global labour markets. The widespread adoption of contraceptive methods has enabled women to delay pregnancy by choice, allowing them to enter and remain in the workforce for longer periods (Allyn et al., 2016).

This demographic dividend, the growth in an economy that results from a change in the age structure of a country's population, represents both an opportunity and a challenge for recent global population trends. It is characterized by a higher proportion of working-age individuals (15-64 years) relative to those in non-working age groups (14 years and younger, and 65 years and older). While the higher share of working-age people presents significant potential for increased productivity and robust economic growth, a more concerning aspect lies in the escalating old-age dependency ratio observed in many highly industrialized countries (Hyndman et al., 2021). This trend undermines intergenerational monetary fairness, as fewer working-age individuals must bear the increasing financial burden of welfare and pensions for a growing elderly population. Labor markets are shrinking, and the increasing number of elderly individuals, most of whom are retired and have limited work capacity, presents significant challenges for pension systems. At the same time, a declining proportion of young workers reduces the tax base needed to support the aging population. Europe, the first region to experience this demographic shift, began its transition toward lower fertility rates and longer life expectancy in the late 19th and early 20th centuries (Jakovljevic & Laaser, 2015). As a result, Europe now has the world's most aged population, with 25% of its residents aged 60 or older. Notably, in 2020, people over 60 outnumbered children under 5 for the first time in history. By 2030, the number of those aged 60+ will increase by 34%, and by 2050, they will outnumber children under 5, as well as adolescents and young adults aged 15–24 (Jakovljevic et al., 2021).

The accelerating aging trend presents significant challenges across many regions, reshaping societal structures and economic stability. Beyond its direct impact on pension systems and labour markets, this demographic shift is also redefining family dynamics, increasing caregiving responsibilities for younger generations, and altering consumption and savings patterns (Ren, 2024). With rising life expectancy, the population of individuals aged 80 and older, who are less likely to remain in the workforce and more likely to require long-term care and medical assistance, is expected to grow substantially. Meanwhile, those aged 60 to 70, though still professionally active, will face an increasing need for medical interventions to sustain their health and continued employment. These demographic shifts create pressing challenges for both public policy and workforce management, demanding proactive strategies to ensure economic and social sustainability.

2. Reshaping the workforce: Implementing policies to address the challenges of an ageing population

In response to population aging, international organizations and governments have introduced reforms to adapt pension systems and manage the rising number of retirees. Simultaneously, a global framework for healthy aging has been developed to promote well-being, ensure healthcare access, and encourage active societal participation, aiming to enhance both financial security and quality of life for older individuals. As part of these global efforts, the World Health Organization introduced a Global Strategy and Action Plan on Aging and Health, adopted by its member states in 2016. This plan places older adults at the centre of its efforts and outlines ten key priorities to establish a policy framework aligned with the Sustainable Development Goals related to healthy aging. Among these priorities, Priority 4 emphasizes the critical role of research in addressing both current and future needs of aging populations. By fostering scientific advancements and evidence-based policies, this initiative seeks to guide governments in implementing effective strategies to enhance the health and well-being of older individuals worldwide.

Addressing the economic and social implications of aging populations requires not only a focus on health and wellbeing but also concrete adjustments to pension and employment policies. Many countries have recognised the necessity of reforming their public pension systems to ensure the long-term sustainability of social security and economic stability (Hinrichs, 2021). Since pension funds are primarily financed by contributions from the working-age population. The concept of the ratio between inactive elderly receiving pensions and the number of contributors to the social security scheme has often been referenced in OECD documents (2019b). Broad employment policies could help improve the system's dependency ratio by increasing female participation in the workforce, launching initiatives to reduce youth unemployment, recruiting more immigrant workers, or encouraging older employees to work longer (Wang et al., 2024). Additionally, the denominator can be expanded by making all gainfully employed individuals liable for contribution payments, thus ensuring they are eligible for pension benefits in the future (Hinrichs, 2021).

Over the past three decades, pension reform policies in Europe have focused on restricting older workers' access to retirement benefits (Ebbinghaus & Hofäcker, 2013). Initially, the goal was to ensure that the normal retirement age became the actual exit age for all older workers. This shift involved closing pathways to early retirement, which had been introduced after the mid-1970s to improve labour market opportunities for younger workers by encouraging older employees to retire early. Reforms such as terminating pre-retirement schemes, raising the eligibility age, ending pension access after long-term unemployment, and limiting disability benefits for labour market reasons helped reverse the trend of early exits, especially in countries like Germany, Austria, and Finland. Additionally, many European countries have introduced flexible retirement options, where claiming a pension before the normal retirement age results in permanent benefit reductions, while working beyond the retirement age comes with bonuses. The increase in labour force participation among men aged 60 to 64 after 2000 is largely attributed to these legislative measures and improved employment opportunities for older workers. Despite these reforms, the average age of labour market exit across most European countries remains below the current standard retirement age (Carone et al., 2016; Komp, 2018; OECD, 2017a, 2019b).

By encouraging individuals to remain in the workforce longer, these reforms also underscore a crucial need for organizations to rethink their strategies regarding aging workers. In this vein, leveraging the expertise and resources of aging employees is critical (Thijssen & Rocco, 2010). The wealth of knowledge and experience accumulated by older workers can be invaluable, particularly in industries where deep expertise is required. Organizations that effectively tap into this experience can gain a competitive advantage, while also promoting an intergenerational collaboration and knowledge sharing environment, which enhances learning (Gerpott et al., 2017) and increases motivation for employees to stay with the organization (Burmeister et al., 2020).

In sum, while raising the retirement age and reforming pension systems were common steps in addressing the demographic shifts brought about by an aging population (Krekula & Vickerstaff, 2020), organizations must also take active measures to adapt to these changes in the workforce. Prolonged working lives necessitate that managers effectively employ older individuals by ensuring they remain healthy, motivated, and productive (Van Woerkom et al., 2023) but effective leadership and a workplace culture that values and supports older employees are also crucial for fostering their engagement and productivity (Wilckens et al., 2023). Research has identified various organizational practices that can support the successful employment of an older workforce. These include HR policies like flexible work arrangements, phase retirement options, and opportunities for training and development (Wilckens et al., 2021). By supporting aging employees, companies can ensure that they remain competitive in a rapidly changing economic landscape while contributing to the stability of social and economic systems.

3. Ageism and age stereotypes in the workplace

Demographic shifts in the workforce have led to an increasingly diverse range of employee ages, spurred primarily by extended working lives (Bae & Choi, 2022; Schloegel et al., 2016). While this age heterogeneity can promote intergenerational collaboration and the exchange of diverse perspectives, it also introduces potential for new forms of tension among employees from different age groups (Rudolph & Zacher, 2017). These intergenerational conflicts often stem from age-based stereotypes, which, when endorsed, are closely linked to discriminatory behaviors such as reluctance to communicate and cooperate across age groups (Levy & Macdonald, 2016; Posthuma et al., 2012).

Empirical evidence consistently indicates that ageism adversely affects workers' mental and physical well-being (Lyons et al., 2018; Marchiondo et al., 2019). Among older employees, experiences of age-based discrimination tend to increase over time, correlating with diminished job satisfaction, higher rates of depressive symptoms, and poorer self-rated health (Marchiondo et al., 2019). Beyond the individual consequences, age-based stereotyping carries significant economic implications. For instance, Levy et al. (2020) estimate that negative age stereotypes and discrimination contribute an additional \$28.5 billion and \$11.1 billion, respectively, to healthcare costs in the United States. This represents a major challenge for organizations, particularly in terms of knowledge retention, as older employees serve as crucial sources of expertise and competence (Cochran et al., 2012). Given these economic and organizational impacts, it is in society's broader interest to address this issue, ensuring that the value of older workers is recognized and leveraged for the collective benefit.

3.1 Understanding ageism

Ageism is defined by the World Health Organization (WHO) as “stereotyping, prejudice, and discrimination against people on the basis of their age,” encompassing all age groups (WHO, 2020). However, much of the extant research has focused on attitudes toward older workers, who are frequently characterized as less adaptable, less motivated, and resistant to change (Bal et al., 2011; Levy & Macdonald, 2016; Marchiondo et al., 2019). Younger workers also encounter harmful stereotypes and discriminatory practices, such as being deemed unfit for promotion due to perceived inexperience or viewed as less loyal (Duncan & Loretto, 2004; Schloegel et al., 2016). Reflecting this broad relevance of ageism, the present dissertation examines how it manifests for employees irrespective of their chronological age.

Age stereotypes are frequently identified as a primary, proximal cause of discriminatory practices (Posthuma & Campion, 2009; Voss et al., 2018). Historically, most research has concentrated on the content, prevalence, and situational triggers of descriptive age stereotypes, that is, generalized beliefs about what members of a particular age group (usually older adults) are like (Finkelstein et al., 2018). Common descriptive stereotypes portray older workers as resistant to change, slower, technologically challenged, or more expensive, but potentially more reliable and experienced (e.g., Marcus et al., 2016; Ng & Feldman, 2012). These perceptions can directly influence hiring, promotion, and training decisions if endorsed within an organization, ultimately jeopardizing older workers’ full inclusion (Posthuma & Campion, 2009).

Previous research, however, has introduced the concept of prescriptive stereotypes into age-focused inquiries, highlighting the limitations of efforts that solely address descriptive beliefs (North & Fiske, 2013). While descriptive stereotypes refer to what people are assumed to be like, prescriptive stereotypes detail what people *ought* to be like (Gill, 2004). This notion has been extensively studied in gender contexts; violations of prescriptive gender stereotypes often provoke backlash, personal derogation, and diminished competence ratings (Heilman, 2001; Varghese et al., 2018). Such outcomes can place women in a double bind: conforming to prescriptive norms undercuts perceived agency, whereas defying these norms risks social or professional penalties.

Researchers are now asking whether violating prescriptive age stereotypes can lead to a parallel double bind for older individuals (North & Fiske, 2013). Specifically, if older employees “act their age”, thus conforming to prescriptive norms, they may be seen as passive or incapable of vibrancy and innovation. Conversely, if they “act young,” they risk alienating younger colleagues who may view such behavior as encroaching on their domain (Schoemann & Branscombe, 2011). In attempting to disconfirm unfavorable descriptive stereotypes, older workers might inadvertently trigger prescriptive backlash (Diehl et al., 2020).

North and Fiske (2013) articulate three broad categories of prescriptive age stereotypes, succession, consumption, and identity, arising from intergenerational tensions in resource allocation and social roles. *Succession* implies that older individuals should cede jobs, influence, and resources to younger generations. As retirement ages rise, younger workers may become frustrated when opportunities for advancement appear blocked. *Consumption* reflects beliefs that older workers consume more than their fair share of resources such as healthcare or financial entitlements, prompting younger generations to guard scarce assets

for their own futures (Wolf et al., 2014). *Identity* denotes expectations that older individuals remain within their cultural or social ‘lane,’ avoiding activities or roles typically associated with younger cohorts. Attempts by older adults to defy age-based norms (e.g., adopting youthful behavior or interests) can spur negative reactions from younger peers (Schoemann & Branscombe, 2010).

These prescriptive beliefs can create significant barriers for older workers. When such stereotypes prevail, older employees who remain in the workforce may be viewed as blocking younger peers’ career paths, depleting organizational resources, or overstepping generational boundaries. Thus, interventions aimed at dispelling negative descriptive stereotypes, though valuable, may prove insufficient if organizations fail to recognize and counteract the parallel influence of prescriptive age stereotypes (North & Fiske, 2017).

3.2 Chronological age and ageism

A central debate in ageism research concerns whether chronological age itself correlates with ageist attitudes. In contrast to static demographic traits such as gender and race, age is dynamic, shifting individuals across different age groups throughout their lifespans. This fluidity underpins what Jönson (2013) calls the “out-group paradox of ageism,” wherein people move between categories that might otherwise be seen as out-groups, potentially fostering empathy and mitigating bias (Solem, 2016). Yet younger people, who have not yet experienced older-age membership, may still hold stronger ageist stereotypes.

Findings on the relationship between age and ageist attitudes are mixed. Some studies report that younger workers harbour more negative stereotypes of older colleagues (Bal et al., 2015; Iweins et al., 2012), whereas other research identifies no significant correlation between employees’ own age and their stereotypical views of older adults (Samarra et al., 2020; Vignoli et al., 2021). These inconsistencies underscore the need for further investigation into how descriptive and prescriptive age stereotypes interact with employees’ chronological age, broader organizational climates, and evolving workforce demographics.

4. Physiological changes associated with ageing

4.1 Physical health of older workers

The aging process is inherently linked to several physiological changes, including the loss of muscle mass and a decline in muscle strength (Goodpaster et al., 2006). These changes extend beyond age-related stereotypes and have profound implications for functional capacity. Recent research has shown that significant reductions in muscle strength are strong predictors of functional limitations, disability, and mortality. For instance, Leong et al. (2015) demonstrated that diminished muscular strength, as measured by the handgrip strength (GS) test, serves as a reliable predictor of cardiovascular diseases and mortality. Furthermore, the decline in muscle strength is a key feature of sarcopenia, a geriatric syndrome defined as “the progressive loss of muscle mass and strength, with an increased risk of adverse outcomes such as disability, poor quality of life, and death” (Cruz-Jentoft et al., 2010). Sarcopenia affects approximately 50% of individuals aged 70 and older in Europe, with significant implications for healthcare costs (Bravo et al., 2020).

In addition to muscle strength, aging is associated with various physiological changes that contribute to increased vulnerability to injury. Studies have consistently shown a relationship between aging and the increased risk of occupational injuries, often linked to declines in muscle strength (De Zwart et al., 1995), balance (Brown et al., 1999), bone density (Demontiero et al., 2012), aerobic capacity (Shephard, 1999), and even cognitive function (Belbase, 2016). Research has also found that age-related physical changes often result in occupational injuries and restrict activity (Lee et al., 2012). Many older employees suffer from work-related musculoskeletal disorders with the most significant changes occurring in joints (Delloiacono, 2015; Tugman, 2013). These changes can lead to arthritis, with the incidence of arthritis increasing dramatically after the age of 45 (United States Bone and Joint Initiative, 2011).

Moreover, age-related physical changes, including acute and chronic diseases and MSDs, can negatively affect job performance, increasing the risk of injury (Silverstein, 2008). However, individual factors such as lifestyle, genetics, and work-related demands also play a crucial role in mediating these outcomes. For instance, Punakallio (2003) found that workers whose jobs required balance skills showed better functional balance, likely due to the demands of their work environment.

The burden of injuries, both personal and economic, is notably higher for older workers compared to younger ones (Mallon & Cherry, 2015; Schwatka et al., 2012). Additionally, older workers may experience different types of injuries than younger workers (Crawford et al., 2010; Peng & Chan, 2019; Saminen, 2004). From a physical performance perspective, older workers may compensate for the physical demands of their jobs with accumulated experience (Punakallio, 2003). However, frailty, defined as a biological syndrome of decreased physiological reserve and resistance to stressors, makes older workers more vulnerable to adverse outcomes (Fried et al., 2001). Frailty, combined with demanding or risky job environments, can lead to poorer safety outcomes, despite older workers often having excellent safety records in certain industries (Farrow & Reynolds, 2012).

It is also important to consider the impact of injury severity across age groups. Older workers are more likely to experience serious consequences from accidents, as they may not tolerate trauma as well as younger workers. Therefore, the nature of the work, the work environment, and individual characteristics interact with age to shape safety outcomes. Age itself is rarely the sole factor contributing to fatality; it is typically mediated by a complex interplay of factors, including job type, environmental conditions, and the physical capabilities of the worker (Bravo et al., 2020). Strain and associated health problems also pose considerable costs in terms of health care, presenteeism and absenteeism, disability, and reduced productivity (Hassard et al., 2014). As such, there is growing impetus to understand how older workers navigate and deal with job demands which have significant managerial, organizational, and economic implications (Abbasi & Bordia, 2019)

4.2 Mental health of older workers

A recent systematic review of longitudinal studies has indicated that self-reported general health, mental health, and the presence of chronic diseases are significantly associated with workforce exit through unemployment and work-related disability (van Rijn et al., 2014). While temporary work disability benefits can be granted, the likelihood of returning to paid employment remains relatively low (Järvholm et al., 2014). The body of literature examining

the role of health in early retirement presents a complex and inconclusive picture. Although general health has been found to correlate with early retirement, the association with chronic diseases appears marginal, and a qualitative study has revealed that both good and poor health can influence decisions regarding early retirement (de Wind et al., 2013).

In their studies, von Bonsdorff et al. (2010a, b) identified that diminished work ability, frequent emotional exhaustion, low organizational commitment, and limited job control were predictive of early-retirement intentions among older employees. Existing literature emphasizes that psychosocial risks, including high job demands, role conflict, lack of support from management or coworkers, stress, bullying, and workplace discrimination, have a detrimental impact on the health and well-being of older workers and may contribute to an increased likelihood of early retirement (Beehr et al., 2000; Bentley et al., 2019; Bibby, 2018; Chiu et al., 2001; Nilsson, 2016). Furthermore, research suggests that occupations with inherently high stress levels, such as those in law enforcement (Gershon et al., 2002) and healthcare (Santos et al., 2003), are particularly associated with severe mental health challenges among older workers.

Consistent with these findings, Nilsson (2016) demonstrated that poor work environments, coupled with stress and mental health disorders, were significant factors contributing to early retirement intentions among older employees, particularly in demanding occupational settings (Johnston & Lee, 2009). Additionally, studies have shown that older workers tend to require more rest and recovery time between work shifts, face challenges in maintaining long working hours, and experience negative impacts from shift work (Blok & de Looze, 2011). Nevertheless, other research suggests that older workers may exhibit greater resilience to certain work-related stressors, including work-family conflict and stress (Mauno et al., 2013), as well as exposure to workplace bullying (Bentley et al., 2023).

4.3 Cognitive demands of older workers

Chronological age encompasses a broad spectrum of developmental changes, both positive and negative, across various domains, including cognition (Kanfer & Ackerman, 2004; Salthouse, 2012), physical abilities (Kenny et al., 2008), personality (Roberts et al., 2006), and social-emotional processes (Charles, 2010; Charles & Carstensen, 2010). From a cognitive standpoint, two primary patterns of change emerge, each associated with distinct cognitive, conative, and regulatory capacities: cognitive pragmatics, or crystallized abilities, which reflect accumulated knowledge and experience, and cognitive mechanics, or fluid abilities, which involve processing speed and problem-solving skills (Craik & Bialystok, 2006). On the one hand, as individuals age, they experience an increase in crystallized abilities. These abilities encompass one's accumulated knowledge of their environment, particularly crystallized intelligence, which includes procedural, technical, job-related, and experiential knowledge (Cattell, 1963; Kanfer & Ackerman, 2004). Additionally, older individuals tend to show a preference for, and increased facility with, bottom-up intuitive reasoning (Mata et al., 2007), as well as greater efficiency in environmental scanning and search (Lindenberger & Mayr, 2014).

On the other hand, aging is typically accompanied by a decline in fluid abilities. These abilities are related to top-down control and executive functions, which enable individuals to adapt to novel situations and challenges. Fluid intelligence encompasses working memory, processing speed, inductive reasoning, and the ability to process new information (Cattell,

1963; Kanfer & Ackerman, 2004). As people age, there are often declines in internally guided self-regulation (Amer et al., 2016; von Hippel & Henry, 2011), as well as in selective attention and the ability to narrow focus (Gazzaley & Nobre, 2012; Maillet & Schachter, 2016). These cognitive mechanics and self-regulatory capacities play a vital role in performing complex cognitive tasks.

Substantial evidence indicates that both crystallized, and fluid abilities change throughout the lifespan (Craik & Bialystok, 2006; Salthouse, 2012). While crystallized abilities improve with age, primarily through accumulated life experience, fluid abilities tend to decline as a result of structural and functional changes in the brain, such as reductions in prefrontal cortex activation and functional connectivity (Li, Lindenberger, & Sikstrom, 2001; Lindenberger, 2014). These changes lead to distinct age-related differences in performance on cognitive tasks. For example, tasks that rely on fluid abilities, such as working memory, peak in early adulthood (around age 20) and gradually decline over the next two decades, with a more significant drop after age 40. In contrast, tasks that require "learned knowledge" (i.e., crystallized abilities) continue to improve throughout adulthood, reaching their peak around age 50, before declining more slowly thereafter (Hartshorne & Germine, 2015).

A key takeaway from the literature on lifespan cognitive development is the dual pattern of cognitive change with age: (a) an increase in crystallized abilities, which are linked to cognitive pragmatics; and (b) a decrease in fluid abilities, associated with cognitive mechanics. Employees are best suited to meet cognitive job demands when there is a match between their abilities and the specific demands of their roles. Given the systematic patterns of cognitive gains and losses throughout life (Baltes & Baltes, 1990), older workers may be better equipped to handle certain cognitive demands, while younger workers may be better suited to others. In particular, some cognitive demands align more closely with the configuration of abilities typically seen in younger workers (i.e., high fluid abilities and lower crystallized abilities), while others align more with the abilities commonly found in older workers (i.e., high crystallized abilities and lower fluid abilities). Strain arises when there is a misalignment between an employee's cognitive profile and the demands of their tasks (Abbasi & Bordia, 2018).

5. Local constraints, global dynamics: Late-career teaching in Belgium

The physiological, cognitive, and psychological demands of ageing at work are widely acknowledged across sectors, yet their concrete manifestations vary according to specific institutional and socio-professional contexts. This section focuses on the Belgian context, and more specifically on the French-speaking Community of Belgium (Fédération Wallonie-Bruxelles, FWB), which provides a particularly relevant setting for examining the late-career phase within ECE. To understand how late-career challenges are shaped within this setting, it is first necessary to consider the broader institutional organisation of ECE in Belgium.

5.1 Governance and reform in Belgium's early childhood education system

ECE in Belgium is shaped by a multisectoral and multilingual federal system, reflecting the country's layered institutional architecture. A defining feature of this system is its historical

“split” structure, which separates childcare for children under the age of three from pre-primary education for children aged 2½ to 6. This bifurcation has given rise to distinct regulatory frameworks, governance logics, and professional profiles. While childcare is managed by regional ministers for welfare, pre-primary education falls under the jurisdiction of regional ministers for education and is formally integrated into the school system (OECD, 2006). Since a 2019 federal reform, the compulsory school age has been lowered from six to five, thereby including the final year of pre-primary education within the mandatory system.

Governance of ECEC is decentralised across Belgium’s three language communities, each with its own institutional arrangements. In the Flemish Community, pre-primary education is overseen by the Ministry of Education and Training. Schools benefit from considerable autonomy, grounded in constitutional guarantees of “freedom of education” and “freedom of organisation. The *Agentschap Opgroeien* (Upbringing Agency) supervises the childcare sector for children under three, handling regulation, funding, and place allocation, while leaving day-to-day management to local authorities, non-profits, or private providers.

In the German-speaking Community, the Minister for Education and Scientific Research oversees both childcare and pre-primary education. A reform scheduled for September 2024 will lower the starting age of pre-primary education from three to 2½ years, bringing the region into alignment with the other communities.

In the French Community (FWB), pre-primary education (*écoles maternelles*) is delivered through three provider types, state-run, municipal, and subsidised private institutions, under the authority of the Ministry of Education. Childcare for younger children is governed by the *Office de la Naissance et de l’Enfance* (ONE), which also oversees workforce development, funding, and quality assurance. Recent legislative reforms have aimed to professionalise the sector. A 2019 decree raised the qualification requirements for childcare workers and paved the way for a new bachelor’s degree in early childhood education, introduced in 2023 (César et al., 2012; Pirard et al., 2015). In parallel, structural changes introduced under the *Pacte pour un enseignement d’excellence* have significantly influenced the pre-primary sector. These include the establishment of a unified teacher profile from preschool to secondary education (Décret D. 07-02-2019; MB 05-03-2019), the introduction of a Master’s-level teacher qualification (EQF Level 7), and efforts to enhance the integration of qualified auxiliary staff into pre-primary classrooms, particularly with younger children (Pirard et al., 2024).

5.2 Continuing professional development in ECE: Structures, access, and reform

As the institutional landscape evolves, continuing professional development (CPD) emerges as a crucial support mechanism for ECE staff. For late-career professionals in particular, access to meaningful CPD is key to sustaining motivation, maintaining pedagogical engagement, and adapting to shifting professional expectations. In the French-speaking Community, CPD is coordinated by the *Institut Inter-réseaux de Formation Professionnelle Continue* (IFPC), formerly known as the IFC. Mandated by Book 6 of the Code of Primary and Secondary Education (entered into force in 2022), the IFPC designs an annual training offer in partnership with university colleges, universities, and certified trainers drawn from the educational field.

In addition to IFPC's centralised offer, each of the three educational umbrella organisations delivers on-site CPD activities tailored to their affiliated schools. However, despite this dual structure, CPD remains largely generic. Pre-primary educators report limited access to training specifically addressing early childhood pedagogy, leadership, or mentoring. Topics such as early language, child observation, or socio-emotional development are occasionally included, but most sessions follow a disciplinary logic shared with primary education, diluting their relevance for pre-primary practitioners.

Currently, CPD is mandatory and free for all teachers, including those in pre-primary settings, with a statutory requirement of six half-days per year. Participation remains voluntary, however, for assistants and auxiliary childcare staff, who face significant barriers: lack of allocated time, no access to substitutes, and limited institutional encouragement. Moreover, CPD participation is not formally linked to career progression, reducing its impact on professional trajectories. An exception applies to educators involved in language acquisition programmes (FLA/DASPA), who are required to complete specific modules in language and intercultural mediation—though without resulting in promotion or certification.

Recent reforms (Décret 17-06-2021; MB 30-07-2021) have introduced a six-year planning cycle for CPD, requiring schools to align training activities with institutional action plans and educational policy priorities. This framework encourages schools to design contextualised and sustainable learning programmes. It also enables mixed-format CPD initiatives, including collaborative training across roles and sectors. Notable examples include efforts to support smoother transitions from childcare to preschool, identified as a key priority in the *Pacte pour un enseignement d'excellence* and reiterated in the Community Policy Statement (2019–2024), as well as research-backed initiatives linking schools, cultural institutions, and family services (Housen & Royen, 2019; Housen et al., 2020, 2022). A quality charter currently in development aims to guide and structure these collaborative approaches in the coming years.

5.3 Composition of the ECE workforce in the french-speaking community of Belgium

The composition of the ECE workforce in the FWB reflects a highly qualified and predominantly female professional body, with notable variations across occupational roles. As of 2020, over 89% of personnel working in pre-primary settings with children aged 2½ to 5 held at least a bachelor's degree. Nearly all pre-primary teachers (*instituteurs et institutrices maternelles*) were formally qualified: 95.3% held a specialised Bachelor's degree in pre-primary education, while smaller proportions held related qualifications, 2.4% with a Bachelor's degree in primary education, 0.8% with a general Bachelor's degree supplemented by a lower secondary teaching certificate, and 1.2% with a Master's in Educational Sciences in addition to a Bachelor's in pre-primary education (FWB, 2020).

Alongside the teaching staff, the ECE workforce also includes a range of support professionals. In October 2020, 1,469.74 full-time equivalent (FTE) childcare workers (*puériculteurs/puéricultrices*) were employed as auxiliary staff in *écoles maternelles* financed by the FWB, representing approximately 11.2% of the workforce. These workers typically assist with caregiving and classroom routines, particularly in classes serving younger children (ages 2 and 3). Some schools also employ Assistants who have completed vocational training at the upper secondary level, though not all institutions include such roles,

and data on those without formal qualifications remain unavailable. In addition, a relatively small number of specialised support staff contribute to the pedagogical and developmental framework of pre-primary education. These include psychomotor education teachers (*maîtres/maîtresses de psychomotricité*), who represent 6.2% of staff (812.04 FTE), and more recently, French as an additional language (FLA) teachers (449.58 FTE, 3.4%), who support linguistic inclusion for non-native speakers. No comprehensive data are currently available regarding integration agents or other inclusion-focused roles operating in pre-primary settings.

In addition to qualification levels and occupational diversity, demographic data reveals a workforce that is both ageing and unevenly distributed across age groups. According to the most recent educational indicators (FWB, 2024) (see Figure 15), the average age of teachers in preschool and kindergarten settings is 43.2 years. However, a closer examination reveals a significant concentration of educators around the age of 50, followed by a sharp decline beyond the age of 55. These figures must be interpreted with caution, as the calculation of average age is weighted by teaching hours. Teachers working part-time, whether voluntarily or due to health-related adjustments, contribute proportionally less to these averages, potentially masking the true demographic distribution of the workforce. Within this context, systemic constraints, such as rigid staffing allocations and limited institutional flexibility, significantly reduce the capacity of school leaders to implement targeted measures in support of LCT.

Finally, the gender distribution across the ECE workforce is strikingly homogeneous, with women overwhelmingly represented in all occupational categories. According to 2020 data, 97% of pre-primary teachers, 98.24% of auxiliary workers, 76.51% of psychomotor instructors, and 98% of FLA teachers are female. Leadership positions in pre-primary education reflect a similar pattern: 96.4% of pre-primary school directors are women, compared to 66.6% when leadership roles across both pre-primary and primary education are combined. This pronounced gender imbalance mirrors international trends in the ECE sector, which remains one of the most sex-segregated domains within the broader education workforce (Van Laere et al., 2014). Despite various initiatives aimed at attracting more men to early childhood professions across OECD countries over the past two decades (Peeters, Rohrmann, & Emilsen, 2015), the proportion of male staff remains extremely low, averaging just 3% globally (OECD, 2021). These structural and demographic realities raise critical questions about career trajectories, work-life balance, and the sustainability of professional engagement, particularly for female educators approaching the end of their careers.

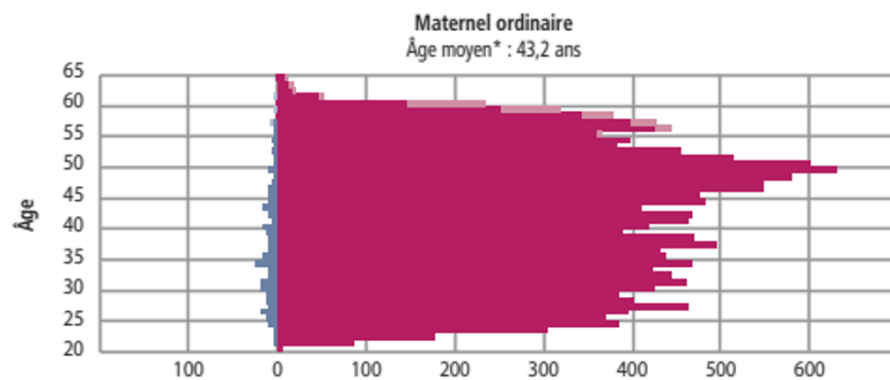


Figure 15. Age pyramids of ECE teachers in FWB (FWB, 2024)

Appendix B

Supplementary materials from chapter 2: Research syntaxes, flow chart, and checklist

Research syntaxes

Database	Research syntax
ERIC 1738 hits	(((MAINSUBJECT.EXACT("teacher retirement") OR ti(retirement OR retire OR retired OR retiring OR preretire* OR "pre retirement" OR postretir* OR "post retirement" OR "personnel termination" OR "work* termination" OR "employee* termination" OR "end of career" OR "end of term" OR "career termination" OR ("sabbatical leave" OR "sabbatical leaves"))) OR ab(retirement OR retire OR retired OR retiring OR preretire* OR "pre retirement" OR postretir* OR "post retirement" OR "personnel termination" OR "work* termination" OR "employee* termination" OR "end of career" OR "end of term" OR "career termination" OR ("sabbatical leave" OR "sabbatical leaves"))) OR (MAINSUBJECT.EXACT("Experienced teachers") OR MAINSUBJECT.EXACT("aging(individuals)" MAINSUBJECT.EXACT("Older Workers") OR MAINSUBJECT.EXACT("Baby Boomers"))) OR ti("long service" OR "long serving" OR veteran* OR "old* teacher*" OR "elderly teacher*" OR "senior* teacher*" OR ("experienced teachers") OR "experimented teacher*" OR "senior teacher" OR "senior teachers" OR "veteran teacher" OR "veteran teachers" OR "aging in academia" OR "aging professionate" OR "aging teacher*" OR "longevity" OR "former generation of teachers" OR boomer*) OR ab("long service" OR "long serving" OR veteran* OR "old* teacher*" OR "elderly teacher*" OR "senior* teacher*" OR ("experienced teachers") OR "experimented teacher*" OR "senior teacher" OR "senior teachers" OR "veteran teacher" OR "veteran teachers" OR "aging in academia" OR "aging professionate" OR "aging teacher*" OR "longevity" OR "former generation of teachers" OR boomer*))) AND ((MAINSUBJECT.EXACT("Teachers") OR MAINSUBJECT.EXACT("Secondary School Teachers") OR MAINSUBJECT.EXACT("Preschool Teachers") OR (MAINSUBJECT.EXACT("Secondary School Teachers") OR MAINSUBJECT.EXACT("Public School Teachers"))) OR MAINSUBJECT.EXACT("Professional Development Schools") OR MAINSUBJECT.EXACT("Special Education Teachers")) OR ti(Teacher*) OR ab(Teacher*)) AND ((MAINSUBJECT.EXACT("Sabbatical Leaves") OR MAINSUBJECT.EXACT("Professional Training") OR MAINSUBJECT.EXACT("Professional Development") OR MAINSUBJECT.EXACT("Professional Recognition") OR MAINSUBJECT.EXACT("Individual Development") OR MAINSUBJECT.EXACT("Lifelong Learning") OR MAINSUBJECT.EXACT("Training Methods") OR

	MAINSUBJECT.EXACT("Skill Development") OR MAINSUBJECT.EXACT("Staff Development") OR MAINSUBJECT.EXACT("Professional Isolation") OR MAINSUBJECT.EXACT("Mentors") OR MAINSUBJECT.EXACT("Professional Identity")) OR ti("professional training" OR "professional development" OR "professional recognition" OR "collegiality" OR "individual development" OR "staff development" OR "career development" OR "professional isolation" OR mentor* OR identity) OR ab("professional training" OR "professional development" OR "professional recognition" OR "individual development" OR "staff development" OR "career development" OR "professional isolation" OR mentor* OR identity)))
SCOPUS 986 hits	(INDEXTERMS ("retirement") OR INDEXTERMS ("Retiring") OR INDEXTERMS ("personnel termination") OR INDEXTERMS ("employee termination") OR INDEXTERMS ("end of career") OR INDEXTERMS ("end of term") OR INDEXTERMS ("sabbatical leave") OR INDEXTERMS ("experienced teacher") OR INDEXTERMS ("older worker") OR INDEXTERMS ("aging") OR INDEXTERMS ("baby boomer*") OR INDEXTERMS ("long service") OR INDEXTERMS ("long serving") OR INDEXTERMS (veteran*) OR INDEXTERMS ("senior teacher*") OR INDEXTERMS ("longevity") OR INDEXTERMS ("boomer*") OR TITLE- ABS-KEY("Retirement" OR "Personnel Termination" OR "Aging" OR "retire*" OR retiring OR preretir* OR "pre retir*" OR postretir* OR "post retir*" OR "work* termination" OR "employee* termination" OR "end of career" OR "end of term" OR "career termination" OR "sabbatical leav*" OR "experienced teacher*" OR "experimented teacher*" OR "older worker*" OR "baby boomer*" OR "long service" OR "long serving" OR veteran* OR "old* teacher*" OR "elderly teacher*" OR "senior* teacher*" OR "aging in academia" OR "aging professionate" OR "aging teacher*" OR longevity OR "former generation of teacher*" OR boomer*)) AND (INDEXTERMS (teacher*) OR INDEXTERMS ("High School Teacher*") OR INDEXTERMS ("College Teacher*") OR INDEXTERMS ("Preschool Teacher*") OR INDEXTERMS ("Middle School Teacher*") OR INDEXTERMS ("Elementary School Teacher*") OR INDEXTERMS ("Special Education Teacher*") OR TITLE-ABS- KEY("teacher*")) AND (INDEXTERMS ("Professional Training") OR INDEXTERMS ("Professional Development") OR INDEXTERMS (" Professional Development Schools") OR INDEXTERMS ("Professional Recognition") OR INDEXTERMS ("Individual Development") OR INDEXTERMS ("Staff Development") OR INDEXTERMS ("Skill Development") OR INDEXTERMS ("Training Methods") OR INDEXTERMS (" Lifelong Learning") OR INDEXTERMS ("Professional Isolation") OR INDEXTERMS ("Mentor*") OR INDEXTERMS ("Professional Identity") OR INDEXTERMS ("Career Development") OR TITLE-ABS-KEY("Professional Training" OR "Professional Development*" OR "Professional Recognition" OR "Individual Development*" OR "Staff Development*" OR "career development*" OR "Professional Isolation" OR Mentor* OR identit*))
PSYCINFO 603 hits	(((MAINSUBJECT.EXACT("teacher retirement") OR ti(retirement OR retire OR retired OR retiring OR preretire* OR "pre retirement" OR postretir* OR "post retirement" OR "personnel termination" OR "work* termination" OR "employee* termination" OR "end of career" OR "end of term" OR "career termination" OR ("sabbatical leave" OR "sabbatical leaves")) OR ab(retirement OR retire OR retired OR retiring OR preretire* OR "pre retirement" OR postretir* OR "post retirement" OR "personnel termination" OR "work* termination" OR "employee* termination" OR "end of career" OR "end of term" OR "career termination" OR ("sabbatical leave" OR "sabbatical leaves")) OR (MAINSUBJECT.EXACT("Experienced

	teachers") OR MAINSUBJECT.EXACT "aging(individuals)" MAINSUBJECT.EXACT("Older Workers") OR MAINSUBJECT.EXACT("Baby Boomers")) OR ti("long service" OR "long serving" OR veteran* OR "old* teacher*" OR "elderly teacher*" OR "senior* teacher*" OR ("experienced teachers") OR "experimented teacher*" OR "senior teacher" OR "senior teachers" OR "veteran teacher" OR "veteran teachers" OR "aging in academia" OR "aging professionate" OR "aging teacher*" OR "longevity" OR "former generation of teachers" OR boomer*) OR ab("long service" OR "long serving" OR veteran* OR "old* teacher*" OR "elderly teacher*" OR "senior* teacher*" OR ("experienced teachers") OR "experimented teacher*" OR "senior teacher" OR "senior teachers" OR "veteran teacher" OR "veteran teachers" OR "aging in academia" OR "aging professionate" OR "aging teacher*" OR "longevity" OR "former generation of teachers" OR boomer*)) AND ((MAINSUBJECT.EXACT("Teachers") OR MAINSUBJECT.EXACT("Secondary School Teachers") OR MAINSUBJECT.EXACT("Preschool Teachers") OR (MAINSUBJECT.EXACT("Secondary School Teachers") OR MAINSUBJECT.EXACT("Public School Teachers")) OR MAINSUBJECT.EXACT("Professional Development Schools") OR MAINSUBJECT.EXACT("Special Education Teachers")) OR ti(Teacher*) OR ab(Teacher*)) AND ((MAINSUBJECT.EXACT("Sabbatical Leaves") OR MAINSUBJECT.EXACT("Professional Training") OR MAINSUBJECT.EXACT("Professional Development") OR MAINSUBJECT.EXACT("Professional Recognition") OR MAINSUBJECT.EXACT("Individual Development") OR MAINSUBJECT.EXACT("Lifelong Learning") OR MAINSUBJECT.EXACT("Training Methods") OR MAINSUBJECT.EXACT("Skill Development") OR MAINSUBJECT.EXACT("Staff Development") OR MAINSUBJECT.EXACT("Professional Isolation") OR MAINSUBJECT.EXACT("Mentors") OR MAINSUBJECT.EXACT("Professional Identity")) OR ti("professional training" OR "professional development" OR "professional recognition" OR "collegiality" OR "individual development" OR "staff development" OR "career development" OR "professional isolation" OR mentor* OR identity) OR ab("professional training" OR "professional development" OR "professional recognition" OR "individual development" OR "staff development" OR "career development" OR "professional isolation" OR mentor* OR identity)))
FRANCIS 513 hits	((ti.*:("Teacher" OR "teachers") OR ct.*:("Teacher") OR kw.*:("Teacher")) OR (ti.*:("Pre-School Teacher") OR ct.*:("Pre-School Teacher") OR kw.*:("Pre-School Teacher")) OR (ti.*:("Primary School Teacher") OR ct.*:("Primary School Teacher") OR kw.*:("Primary School Teacher")) OR (ti.*:("Secondary School Teacher") OR ct.*:("Secondary School Teacher") OR kw.*:("Secondary School Teacher")) OR (ti.*:("Higher Education Teacher") OR ct.*:("Higher Education Teacher") OR kw.*:("Higher Education Teacher"))) OR (cc.*:("520-238")) AND ((ti.*:("Age 50-59" OR "Edad 50-59") OR ct.*:("Age 50-59" OR "Edad 50-59") OR kw.*:("Age 50-59" OR "Edad 50- 59")) OR (ti.*:("Age 60-69" OR "Edad 60-69") OR ct.*:("Age 60-69" OR "Edad 60-69") OR kw.*:("Age 60-69" OR "Edad 60-69")) OR (ti.*:("Seniors") OR ct.*:("Seniors") OR kw.*:("Anciens" OR "Seniors")) OR (ti.*:("Retirement" OR retire OR retired OR retiring OR preretired OR "pre retirement" OR postretired OR "post retirement" OR "personnel termination" OR "work* termination" OR "employee termination" OR "end of career" OR "end of term" OR "career termination" OR "sabbatical leave" OR "sabbatical leaves") OR

ct.*:(("Retirement")) OR kw.*:(("Retirement")) OR (ti.*:(("Work Experience" OR "long service" OR "long serving" OR veteran OR "old teacher" OR "older teacher" OR "old teachers" OR "old teachers" OR "elderly teacher" OR "elderly teachers" OR "senior teacher" OR "senior teachers" OR "Experienced teachers" OR "experimented teacher*" OR "senior teacher" OR "senior teachers" OR "veteran teacher" OR "veteran teachers" OR "aging in academia" OR "aging professionate" OR "aging teacher*" OR "longevity" OR "former generation of teachers" OR boomer OR boomers) OR ct.*:(("Work Experience")) OR kw.*:(("Work Experience")) OR (ti.*:(("Middle age adult" OR ct.*:(("Middle age adult" OR kw.*:(("Middle age adult")) OR (ti.*:(("Old person" OR "Elderly Person")) OR ct.*:(("Old person" OR "Elderly Person")) OR kw.*:(("Old person" OR "Elderly Person")))) AND ((ti.*:(("Professional development" OR ct.*:(("Professional development" OR kw.*:(("Professional development")) OR (ti.*:(("Continuing training" OR ct.*:(("Continuing training" OR kw.*:(("Continuing training")) OR (ti.*:(("Life-Long Training" OR ct.*:(("Life-Long Training" OR kw.*:(("Life-Long Training")) OR (ti.*:(("Professional training" OR "Vocational training" OR ct.*:(("Professional training" OR "Vocational training" OR kw.*:(("Professional training" OR "Vocational training")) OR (ti.*:(("Training Method" OR ct.*:(("Méthode de formation" OR "Training Method" OR kw.*:(("Training Method")) OR (ti.*:(("Professional Identity" OR "sabbatical leave" OR "Professional Recognition" OR "reconnaissance professionnelle" OR "Individual Development" OR "Skill Development" OR "Staff Development" OR "Professional Isolation" OR "Mentors" OR "mentor" OR "mentoring" OR ct.*:(("Professional Identity" OR kw.*:(("Professional Identity")) OR (ti.*:(("Collegiality" OR ct.*:(("Collegiality" OR kw.*:(("Collegiality")) OR (ti.*:(("Identity" OR ct.*:(("Identity" OR kw.*:(("Identity"))))

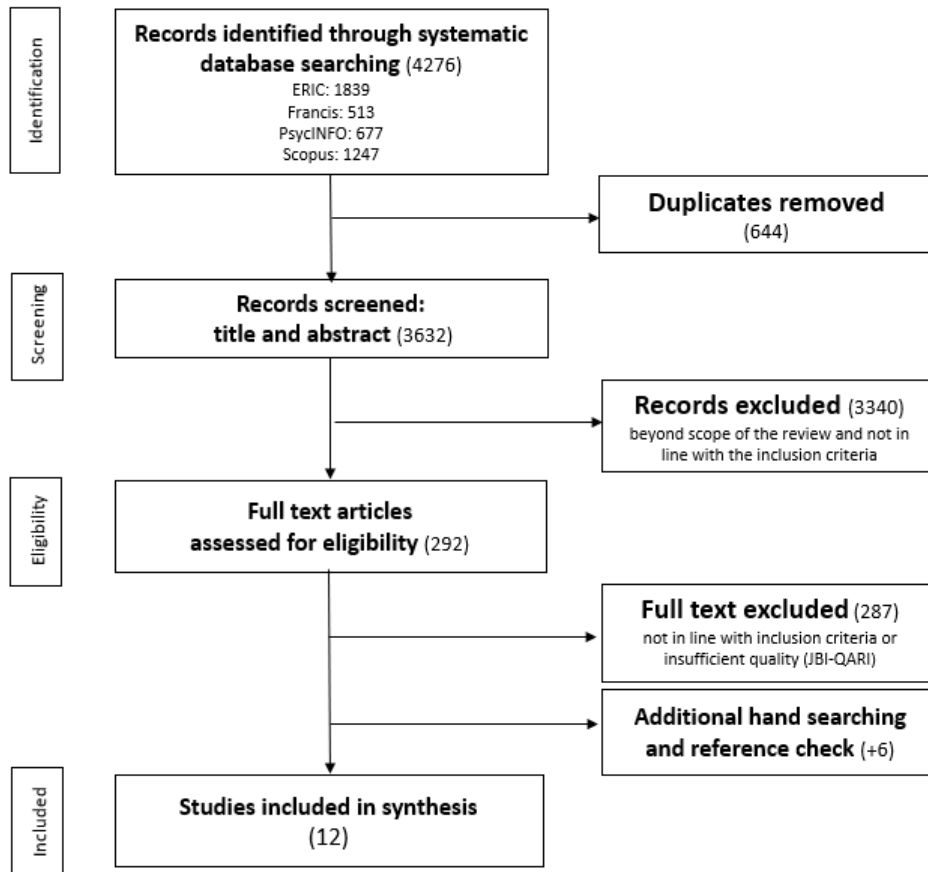


Figure 16. Flow Chart Illustrating the Literature Search Process

Table 24. Effective Professional Development for Teachers:
A Checklist, from Hunzicker (2011)

	Yes	Partly	No
Supportive			
• Does it combine the needs of individuals with school/district goals? • Does it engage teachers, paraprofessionals and administrators? • Does it address the learning needs of specific schools, classrooms, grade levels and/or teachers? • Does it accommodate varying teaching assignments, career stages and teacher responses to educational innovation? • Does it accommodate individual learning styles and preferences? • Does it integrate teacher input and allow teachers to make choices?			
Job-embedded			
• Does it connect to teachers' daily responsibilities? • Does it include follow-up activities that require teachers to apply their learning? • Does it require teachers to reflect in writing?			
Instructional focus			
• Does it emphasize improving student learning outcomes? • Does it address subject-area content and how to teach it? • Does it help teachers to anticipate student misconceptions? • Does it equip teachers with a wide range of instructional strategies?			
Collaborative			
• Does it engage teachers physically, cognitively, and emotionally? • Does it engage teachers socially in working together toward common goals? • Does it require teachers to give and receive peer feedback?			
On-going			
• Does it require a high number of contact hours over several months' time? • Does it provide teachers with many opportunities over time to interact with ideas and procedures or practice new skills? • Does it 'build' on or relate to other professional development experiences in which teachers are required to engage?			

Checklist registered on the ERIC database as ED510366 (Hunzicker 2011). Available from: <http://www.eric.ed.gov/PDFS/ED510366.pdf> [Accessed March 03 2025].

Appendix C

Supplementary materials from chapter 6: Overview of the intervention

Day 1 of the training introduces participants to the Precontemplation and Contemplation phases, focusing on understanding personal resources and identifying situations that cause stress in daily work life. The session begins with an icebreaker activity, the World Café (Fouché & Light, 2011), where participants engage in dynamic discussions on key topics such as the challenges and advantages of their profession, their expectations for the future, and the skills they wish to develop. This participatory approach is designed to foster meaningful exchanges and raise awareness about job demands and resources, aligning with the TTM's cognitive processes of dramatic relief and consciousness-raising (Bernard et al., 2014). Next, the presentation introduces the JD-R model (Bakker & Demerouti, 2023), which explores the balance between job demands and resources. It focuses on how personal resources, such as resilience, self-efficacy, occupational future time perspective (OFTP), and selection, optimisation, and compensation (SOC) strategies (Grover et al., 2018) impact work engagement, well-being (Bakker & Demerouti, 2023), and participation in self-directed learning (Blanco-Donoso et al., 2017). Participants are introduced to four personal resource profiles (see Brouhier et al., 2023) and reflect on their own status through a series of assessments. These activities encourage participants to evaluate their current resources and initiate cognitive processes such as self-re-evaluation and environmental reappraisal.

Day 1 concludes with the introduction of Home Assignment 1, which guides participants in applying the JD-R model to their professional contexts and identifying situations that either induce stress or facilitate flow in their daily work (Prochaska et al., 1994). This assignment involves evaluating participants' job demands, resources, and personal resources to assess whether they are in balance or imbalance. Participants are encouraged to seek feedback from a trusted colleague, particularly regarding their personal resources, and are asked to share examples of both challenging situations and conditions that enhance well-being. By completing these exercises, participants foster greater self-awareness, gain insight into their professional constraints and resources, and activate the cognitive processes of self and environmental re-evaluation (Prochaska et al., 1994).

Day 2 focuses on developing effective strategies for dealing with work-related challenges, aligning with the Contemplation and Preparation phases. The day begins with a theoretical recap of the core concepts and objectives, emphasising the importance of understanding personal resources and their role in addressing hindering demands. Participants engage in small group discussions to explore daily work situations and share strategies for coping with challenges. These discussions are followed by a whole-group presentation, where participants summarise their findings and strategies, fostering collective reflection and idea-sharing. Researchers also introduce various coping strategies from the literature in relation with the four personal resources, such as resilience-building techniques (Bakker et al., 2020; Dishon-Berkovits et al., 2023), mindfulness and yoga practices (Hartfiel et al., as cited in

Abdin et al., 2018), and cognitive reframing (Robson & Troutman-Jordan, 2014), to help participants better manage stress and increase self-efficacy. The session continues with practical tools aimed at improving participants' ability to manage their professional lives. These tools include the Pareto 80/20 principle for task prioritisation (Kirillov et al., 2015), the Deming cycle for continuous improvement (Liu, 2024; Maruta, 2012), and time-management strategies like Pomodoro and SMART goal setting (Latham & Locke, 2007). These strategies are designed to help participants select, optimise, and compensate for work-related demands.

Day 2 concludes with the introduction of Home Assignment 2, designed to help participants reflect on their future ambitions and career planning through self-empowerment exercises, equipping them with the tools to navigate both current challenges and future opportunities. This assignment consists of three exercises aimed at supporting career development and boosting motivation. Participants begin by creating a "career tree" to represent their aspirations, breaking down goals into actionable tasks using SMART goal setting, while incorporating the OFTP model and SOC strategies (see Park et al., 2020). The second exercise involves writing a "letter to your future self" to foster self-empowerment and self-efficacy, followed by implementing a strategy learned on Day 2 to strengthen a personal resource, with feedback from a colleague. This assignment transitions participants into the action phase, laying the groundwork for further growth throughout the training (Prochaska et al., 1994).

Day 3 focused on developing a personalised plan of action, guiding participants to create a clear and actionable strategy aligned with their professional goals. The session begins with a theoretical recap of the JD-R model and personal resources, followed by small group discussions where participants reflect on their career trees and the long-term objectives they have set. This allows them to share their strategies for implementation, discuss successes, and identify areas needing adjustment. During a short lecture, participants receive practical advice on structuring an action plan that is specific, attainable, and sustainable, in line with the Maintenance phase of the TTM model (Prochaska & DiClemente, 1982). The main activity involves participants creating an individualised project plan to manage significant job demands or activate personal resources. They are guided through goal setting using the "if," "when," "where," and "how" approach, with strategies to optimise and compensate for challenges (Müller et al., 2016). This process is complemented by SMART goal setting to ensure clarity and effectiveness (Latham & Locke, 2007). The day concludes with a self-reflection exercise and the completion of the post-test questionnaire, where participants elucidate on the resource(s) they intend to continue to strengthen, elaborate on the changes they have initiated, and detail their efforts to sustain the change.