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DOCTOR OF PHILOSOPHY

Emotion, wellbeing, and professional learning: towards a new conceptual framework promoting agency in student experience

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Emotion, wellbeing, and professional learning: towards a new conceptual framework promoting agency in student experience.

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Glossary of Terms

Term	Definition
Adaptive Ecologies	Inter and intrapersonal resources that elicit a sense of coping, certainty, and control, leading to adaptive responses that support positive wellbeing and experience.
Adult Learner	An individual who fits within the normative constructs of 'adult' and possesses specific learner qualities, including being self-motivated, goal-driven, and an interest in ongoing formal or informal learning opportunities oriented towards knowledge acquisition.
Affect-cognition interface	The interaction between emotion as a feeling state, and cognitive processes (Pekrun et al., 2007).
Affective dimension	The valence, arousal, or tension qualities that define a feeling state.
Agency (as an appraisal)	An appraisal variable oriented at self or other, that assigns a blame or pride evaluation for an event.
Agentic orientation	A mindset activated through a perceived sense of control, certainty, and effective coping.
Appraisal theory	A psychological theory that explores how an individual evaluates an event and how these evaluations influence emotion responses.
Autonomy supportive environments	Environments that cultivate independence and self-determination toward goals (Ryan & Deci, 2020).
Competence Supportive environments	Environments that provide structure and feedback leading to a sense of self-efficacy toward goal-pursuit (Ryan & Deci, 2020).
Complexity Theory	A theoretical approach to studying complex systems characterised by intricate interactions and relationships among diverse elements.
Developing Professional	Budding professionals on the cusp of entering the workforce and those at various points along their professional trajectory.
Ecologies	The interconnected systems and contexts that influence and shape an experience.
Ecological Agency	Agency that is achieved in transaction with a particular context for action (Biesta & Tedder, 2007).
Emotion	A superordinate system that harnesses multiple organismic sub-systems during periods of perceived stress oriented toward adaptive responses to maintain positive wellbeing.
Emotion-Wellbeing Process Map	A visual representation illustrating the interactions of emotion and wellbeing in shaping the developing professionals' student experience.
Experience	The complexity of encounters that shape an individual's relationship and sense of meaning with and in the world; it is influenced by episodic and longitudinal elements that inform identity, attitudes, beliefs, and values.
Holism	An epistemological position that views experience as a comprehensive and complex conceptual whole best understood through an examination of the

	interconnectedness and influential interplay of inter and intra subjective and objective factors.
Integrated Emotion-Wellbeing Framework	A comprehension and unified frame that brings various components of emotion and wellbeing together to provide a holistic guide for promoting positive student experience according to four adaptive ecologies.
Internal Motivation	Motivation that comes from within the individual and is driven by personal values and interests.
Intersectionality theory	A framework for exploring the varying social and cultural identities that define an individual and how these intersect to shape experience (Crenshaw, 1991).
Personal Agency	The capacity of an individual to act independently and make choices that shape their own life.
Pragmatic Phenomenology	An approach that seeks to understand subjective experience as a foundation for addressing practical concerns (Vos, 2020) .
Professional learning	An ongoing process of learning vested in updating knowledge, skills, and understanding related to a profession.
Social Supports	Practices or processes that encourage belonging and connectedness in a social context.
Student Experience	A complex adaptive system arrived at through the interplay of biopsychosocial cultural processes at work during person-environment interactions across varying contexts and with a bio-inherited interest in wellbeing. Through this process, emotion acts as a central organising construct.
Transactional Process	A process that views the student as an active participant, reciprocally influencing and being influenced by the environment within which they interact.
Wellbeing	A multifaceted concept that shapes an overarching state of being. It encapsulates measures of happiness, satisfaction, psychological functioning, and coping potential.
Systems theory	An interdisciplinary theory that studies the structure, interactions, and influence of systems and how they shape an experience.

Acknowledgements

Abstract

Emotion matters in human experience. It shapes how an individual interacts with their world. Increasingly, emotion is garnering attention in adult education contexts as a core factor influencing wellbeing and learning. It has relevance in the developing professional's student experience where individuals find themselves enmeshed as active participants in and across a labyrinthine of systems and engaging in person-environment interactions that benefit, challenge, or threaten their student journey. Emotion has a principal role in these interactions, harnessing multiple organismic sub-systems to orchestrate a response according to how the individual construes the interaction. This publication-based PhD examines the legitimacy of these ideas on two levels. First, through an interrogation of five stand-alone publications that each explore the role of emotion across varying adult student populations and second, as an amalgamated project guided by three research questions. The amalgamated project succeeds in a deeper level of examination than previously achieved by the individual articles; it provides new insight into emotion's role and relationship with wellbeing and introduces an agentic framework for shaping developing professionals' student experience.

The body of work coheres through an epistemological orientation toward Holism. Holism captures the complexity of the developing professionals' student experience as a product of person-environment interactions, shaped according to biopsychosocial-cultural processes that are directed by emotion. Holism drives the project's theoretical framework and favours a meta-theoretical examination and methodologically pluralist approach governed by mixed methods. This permits the examination of the developing professional's student experience as a complex phenomenon; it results in a reconceptualization that is revelatory, moving beyond a descriptive measure of satisfaction to disentangle and distil the multiple layers of interactions that shape the experience. A meta-synthesis approach is used to examine the amalgamated publications and results in an explanatory emotion-wellbeing process map that is bespoke to this population. It also informs the design of a practical emotion-wellbeing framework, centralising wellbeing as a responsibility of all, and promoting agentic orientations through attention to teaching and learning contexts that promote control, certainty, and coping. The framework provides a foundation for future research.

Declaration

I declare that the body of work contained in this doctoral study, and being presented for the degree of Doctor of Philosophy has been composed solely by myself, except as stated otherwise through reference or acknowledgement of co-authorship. No where else has the work been previously presented or accepted for a higher degree.

Wendee White
(June 2023)

Orientation to the Study

Emotion matters in human experience. This is an idea that permeates the body of published works contained in this thesis and that defines the overarching project that constitutes this PhD by publication. It is an idea whose legitimacy as a core focus in student experience will be argued through a careful and critical examination of the individual articles, their research processes, approaches, and findings - addressing their relevance, significance, limitations, and meaningful contributions to the field of Higher Education and Adult Learning. The thesis makes a case for amalgamating the individual articles to achieve a higher level of understanding not possible through the stand-alone publications. In doing so, the individual participant groups from each article are united into a broader category of developing professionals. This makes way for a new set of research questions that support a deeper level of examination of the role of emotion and its relationship with wellbeing in shaping developing professionals' student experience. A meta-synthesis is used to generate an explanatory model of the emotion-wellbeing relationship bespoke to this population and arrives at a framework that provides a foundation for future research.

The following sections orient the reader to the retrospective PhD. I begin with a reflection on the 'The Golden Thread' - the unifying theme connecting the collection of works within the wider project and that represents my current thinking about the role of emotion in student experience and why '*emotion matters*'. Following this, I unfold an overview of the retrospective PhD pathway, the challenges to be overcome, and the structural terrain that will facilitate the process.

The Golden Thread

The following statement reflects the complexity of emotion as a driver in human experience. It is an understanding that has been shaped throughout my research journey and one that will become inherently clear to the reader as the chapters unfold. I felt it was important to present this complexity from the outset to attune the reader's attention to the multi-component quality of emotion and its relationship to the multiple interacting layers that inform the student experience.

> *Emotion is a nexus between interpersonal and intrapersonal interactions,*
> *entangled with cognitive appraisals and bodily properties oriented*
> *towards wellbeing; it shapes human experience and learning (White &*
> *Ingram, 2023).*

This Golden Thread has emerged through my research journey, beginning well before the initial publication, and as a part of my own teacher identity; it is a product of my own '*professional becoming*', shaped over time through critical reflection leading to increased awareness (Hager & Hodkinson, 2011; Scanlon, 2011). These ideas and the utility of the golden thread as a foundation of the developing professional student experience constitute the critical examination to unfold in the chapters that follow.
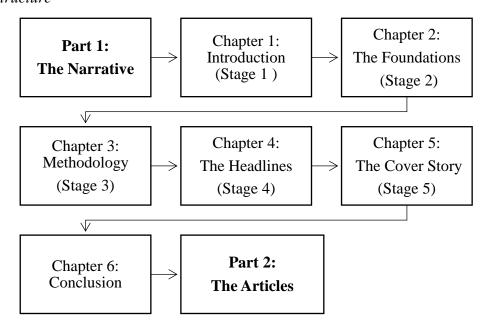
The Retrospective PhD by Publication

Unlike the traditional monograph PhD based on one large research project over a period of three to five years, the retrospective PhD consists of two parts; a series of published articles accompanied by a narrative written over one year after the publications have been completed, through which the candidate must demonstrate 'doctorateness' (Poole, 2015). This includes the cohesiveness and originality of the work and capacities that define disciplinary belonging and competence, including, knowledge creation, critical interrogation, and application of ideas (Peacock, 2017; Poole, 2015). While disciplinary belonging and research competence might be inferred through the published works presented in part two of the thesis, the narrative is a meaning-making process that constitutes an argument for the significance of the work, establishing how the series of articles that form part two have individual value, relate to one another, and as an integrated whole offer new contributions to the field (Nygaard & Solli, 2021). Smith (2015) suggests an argument of this nature necessitates a flexible structural approach that yields authorial control. Next, I elucidate my approach, presenting my adopted thesis structure to strategically demonstrate doctorateness.

My narrative engages a 6-chapter structure, and adapts Grant's (2010, p. 250) five-stage 'Logic of Connectivity'. The Logic of Connectivity supports overcoming what Nygaard and Solli (2021) present as the main challenge of the thesis by publication, moving beyond the fragmented individuality of each article to demonstrating their topical cohesiveness as a body of knowledge. Using Grant's (2010) Logic of Connectivity, my aim is to demonstrate the elements of cohesiveness, disciplinary belonging, originality, application, and independence that define doctorateness. Grant's five stages have been adapted to structurally support my 'story telling' about the processes that have led to this final product (Nygaard & Solli, 2021, p. 74). Figure 1 offers an illustrative representation of my two-part thesis composition and is followed by a chapter overview for Part 1, including how each stage of the 'Logic of Connectivity' (Grant, 2010) is to be addressed.

Figure 1.1

Thesis Structure

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┌──────────────┐     ┌──────────────┐     ┌──────────────┐
│   Part 1:    │ ──> │  Chapter 1:  │ ──> │  Chapter 2:  │
│ The Narrative│     │ Introduction │     │The Foundations│
│              │     │  (Stage 1 )  │     │  (Stage 2)   │
└──────────────┘     └──────────────┘     └──────────────┘
        │
        ∨
┌──────────────┐     ┌──────────────┐     ┌──────────────┐
│  Chapter 3:  │ ──> │  Chapter 4:  │ ──> │  Chapter 5:  │
│ Methodology  │     │ The Headlines│     │The Cover Story│
│  (Stage 3)   │     │  (Stage 4)   │     │  (Stage 5)   │
└──────────────┘     └──────────────┘     └──────────────┘
        │
        ∨
┌──────────────┐     ┌──────────────┐
│  Chapter 6:  │ ──> │   Part 2:    │
│  Conclusion  │     │ The Articles │
└──────────────┘     └──────────────┘
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Chapter Overview

1) Introduction: Chapter one establishes the first stage of connectivity, setting the scene for what is to come through an introduction to the context and relevance of the research project, beginning with a critical reflection on my professional and research journey leading to my doctoral project. After this, I introduce the five articles that embody the thesis, describing their origin, how they articulate with one another, and, taken together inform the research questions that guide the overarching project.

2) The Foundation: The second chapter provides what I feel is necessary groundwork, introducing key terms and concepts that permeate each article and how they have been operationalised as part of the amalgamated project. This involves an interrogation of the interdisciplinary landscape of emotion, wellbeing, and adult learning as a human experience, synthesising and supplementing literature that has previously been presented within the confines of each published article. The chapter finishes with an introduction to the unifying theoretical framework through which I locate myself within the field and provide an overview of three core understandings that inform my conceptualisation of student experience.

3) Methodology: I present the third stage of connectivity in Chapter 3. This is achieved through a review of the methodological choices that define each article and how they cohere as an amalgamated body of work. As a departure point, I revisit the unifying theoretical

framework, Holism, inspecting its strengths, limitations, and underpinning assumptions. I move on to scrutinise the successive methodological choices made across my research journey, and how they contribute to the significance of each article individually and as an integrated whole (Nygaard & Solli, 2021). The chapter closes with an examination of the suitability of a meta-synthesis approach underpinned by principles of grounded theory for answering the guiding thesis questions.

4) The Headlines: This is the first of two chapters dedicated to discussing the results that have emerged through the thesis project. The Headlines represents a fourth stage of connectivity, delineating the evolving body of knowledge through a summary of each article, including a brief introduction, the aim of the research, significance, contribution and originality, limitations, and how what was learned contributes to the amalgamated project. In the final pages of the chapter, I introduce findings arrived at through the initial stage of the meta-synthesis and, in doing so, begin to define a clear relationship between the articles; this serves as a segue into chapter 5, which expounds on the thesis findings, addressing how, as an amalgamated project, they inform the current thesis questions and contribute a meaningful and relevant body of knowledge (Nygaard & Solli, 2021).

5) The Cover Story: this chapter unfolds a presentation and critical discussion of findings from the tertiary level of meta-synthesis. It reveals *new insights* (Grant, 2010) that address the three guiding thesis questions and inform the originality and contribution of the thesis project as a body of scholarly work. The chapter consolidates the connectivity across the body of work, producing new understanding that is greater than could be achieved through each individual article. It bridges the theoretical and practical domains of the project, discussing the real-world application of the findings as a foundation for their relevance and meaningfulness.

6) Conclusion: I begin this final chapter reflecting on the thesis project and my own journey of '*becoming*' (Lee, 2011). I examine the project's contributions within the wider scholarly discourse and implications for the research within higher education and adult learning contexts. I consider the limitations of the research and signal future directions for my own research agenda. In closing, I take the opportunity to revisit key learnings that have emerged through the project.

With the direction of travel established, I will now introduce my path to becoming a doctoral candidate.

<p style="text-align:center">Part 1: The Narrative</p>
<p style="text-align:center">Chapter 1</p>
<p style="text-align:center">Introduction</p>

On Becoming a Doctoral Candidate

Scanlon (2011) describes the 'professional self' as an "ever-changing phenomenon, never fully realised, always in the process of *becoming* other" and inherently linked with "notions of life-long learning" (p. 14). For Hager and Hodkinson (2011) learning and *becoming* are synonymous with the developing professional and require reflection on the inter and intrapersonal interactions that shape human experience. As I reflect on the journey that has informed the body of works that will be examined through this thesis, I draw from the authors' notions of '*professional self'* and '*becoming'*. By nature of its design, I have found the retrospective PhD pathway a process of *becoming* defined by my ever-changing professional and researcher identity and according to successive learning experiences that over time have shaped my understanding of the relationship between emotion and student experience. Therefore, I felt setting the context for the study warranted a revisiting and reflection on key inter and intrapersonal events, which I define as "transitional episodes" (TE), that have shaped my 'professional self', leading to the series of published work and doctoral candidacy.

TE 1 (1998-2003): Early teacher identity: an orientation towards emotion and wellbeing

Teacher identity provides a lens through which a teacher engages as a professional. It defines their actions, interactions, and understanding of the various aspects of the teacher role (Sachs, 2016) and takes root during initial teacher training (Chen et al., 2022). My orientation towards emotion and wellbeing as core factors in my teacher identity took shape during my year of studying to be a teacher, where I engaged in theoretical and practical opportunities that introduced me to emotion as a dimension of learning. These early opportunities set my professional trajectory.

I began my teaching career as a special education teacher, supporting children (ages 8-13) with social-emotional difficulties. I witnessed the entangled relationship between emotion, children's interpersonal interactions, and the impact on learning. Reflecting, I recognise my orientation towards emotion and wellbeing drew from tacit knowledge, but I see now, it had a theoretical foundation informed by a Humanistic theory based on Maslow's Hierarchy of Needs (Maslow, 2010), Systems Theory (Bronfenbrenner & Morris, 2006),

<p style="text-align:center">13</p>

Self-Determination Theory (Deci & Ryan, 2008), and Situated Learning Theory (Lave & Wenger, 1991). Little did I know at the time that years later these theories would become a foundation for the conceptual framework that defines this doctoral thesis.

TE 2 (2004 – 2013): Building Research Literacy

As my career progressed, I gained experience teaching diverse populations and developmental stages: early years (birth – 7 years), primary (8-11 years) and secondary (12 – 16 years). Through the eyes of my students (Brookfield, 2017) I became ever more conscious that emotions held a defining place in all learners' experiences. Priestley et al. (2015) suggest patterns of action inform teacher agency, and indeed, my repeated and accumulating awareness of the emotion-learning relationship had become a pattern that fuelled my own teacher agency (Biesta & Tedder, 2007) inspiring my pursuit of professional development in Social Emotional Aspects of Learning. This had a cascading effect on my *professional becoming* through improved research literacy (Sachs, 2016) and use of research-informed practices (Evans et al., 2017). I used action research, underpinned by pragmatism to explore the role of emotion in teaching and learning, which ultimately incited my interest in master's level study.

TE 3 (2013 – 2015): Developing Mastersness

Through master's study I gained critical thinking and reflecting capacities that nourished a depth of examination on the praxis that had shaped my professionalism, and from which emerged new knowledge, authority, and identity leading to my transformation from teacher practitioner to research professional (Green, 2005). My research identity burgeoned and I felt growing pedagogical authority as I gained a deeper understanding of the inter and intrapersonal interactions that inform teacher and pupil affect. So too, my ontological orientation towards holism (Smuts, 1926) emerged and I found myself contesting the reductionist approach that infiltrated the education research in my coursework and research. Couched according to discipline, subject boundaries, or developmental stages, I found this atomistic approach counterintuitive and fractional. My own research necessitated boundary crossing (Akkerman & Baker, 2011) and I gravitated towards holism as I explored the transcendental nature of affect, adopting mixed method strategies to strengthen my knowledge and understanding (Cohen et al., 2018).

TE 4 (2016 – 2022): Overcoming Imposter Syndrome

I joined the School of Education and Social Work (ESW) at the University of Dundee in 2016. As an early career lecturer, I struggled to find my authorial voice (Nelson & Castelló, 2012) and was repeatedly met with rejection. Publication is seen as a core aspect of being an academic and these experiences chipped away at my self-confidence (Mula et al., 2021). The idea of a PhD could not have been further from my mind. It felt allusive and untenable – something 'other people did'. Kamler (2008) suggests a PhD is not to be assumed but "flourishes" through institutional and collegial support paired with an understanding that academic writing is "a complex disciplinary and identity work" (p. 284). In the proceeding years, institutional and collegial support paired with my own dogged determination jettisoned my *becoming* as an academic writer and researcher, defining my journey towards the PhD by publication.

In 2017, I joined a small team researching postgraduate taught (PGT) student experience. For the ensuing years, I engaged exploratory design, oscillating between interpretive and pragmatic paradigms, and through which I came to better understand the complexity of emotion in PGT student experience. During this time, I was disseminating my research through conferences; supporting programme enhancement through programme-level sharing; and succeeded in crossing the publication threshold.

By 2021, I had published three articles and planned the research on two further projects exploring the role of emotion and wellbeing in the adult learner experience. My confidence as an academic writer and researcher was intact and it was at this point, I realised the potential for merging these projects as one overarching piece of research; I prepared two further articles and, in the spring of 2022, through discussion with my mentor and research partner, I made the formal decision to work towards the PhD by publication.

Returning to Scanlon's (2011) notion of *becoming*, the body of work that defines this thesis has taken shape over time, through critical reflection leading to increased awareness. It represents my current understanding of emotion as a central driver in developing professionals' student experience and has informed my own professional becoming. Cogitating on learning as a life-long process, contiguous with becoming a professional (Scanlon, 2011) I would suggest my current understanding is not 'fully realised' and constitutes a need for openness to fluid, iterative, and reflective engagement, and interaction with the constantly emerging body of knowledge (p.14). The following section presents an overview of the published works, intended to illuminate the progression of my learning about

emotion as a driver in student experience, leading to three new questions that unite the articles as one project.

An Overview of the Published Works that Constitute this PhD by Publication

The articles presented in this thesis represent an evolution of my thinking about the role emotion has a as core factor in student experience. This has been achieved through the study of three different participant groups, from which each article's distinct findings enhance my understanding of emotion's role in shaping student experience. Successively, the works presented have contributed a case for exploring, measuring, conceptualising, and redefining student experience as an emotion-centric process. In this section, I describe and make clear how these articles articulate and can be amalgamated as one project guided by three questions that support a new level of exploration and comprehensive understanding.

Article 1: 'Teacher emotion matters: Bridging teacher learning and mathematics instruction in the early years using an affective instruction design' (White & Malkus, 2019; Appendix I). This article examines the affective dimension, or feeling state, of emotion and its role in teacher learning according to the affect-cognition interface. Findings from this research highlight affect as a core feature of professional learning and teacher capacity to enact new practices. It is presented first in the collection because it represents my early understanding of emotion as an affective quality represented by a feeling state.

Article 2: 'Student emotion matters: Understanding and responding to taught postgraduate student experience through the lens of well-being' (Ingram & White, 2020; Appendix II). This article explores postgraduate taught (PGT) student experiences through the lens of wellbeing. It is an important article in the collection as it illuminates the relationship between wellbeing and emotion according to an individual's capacities for coping during periods of perceived threat. White and Ingram (2020) articulate nicely as a segue between articles 1 and 3 because of its influence alerting me to emotion as a driver in PGT student experience. The research reported in this article provides a rich foundation for the conceptual framework which is unfolded and examined in article 3.

Article 3: 'Embracing the complexity: a multifaceted and inter-sectional model of taught postgraduate student experience' (White & Ingram, 2021; Appendix III). The conceptual writing that defines this article is founded on principles of holism. It brings together emotion research, appraisal theory, systems theory, intersectionality theory, and education research to introduce a new integrated framework of the PGT student experience. Emerging from this conceptualisation is a core understanding: the learner is an active

participant in and across a host of complex systems, and their emotion experience can be shaped according to responsive and adaptive ecologies and personal agency. The conceptual framework presented in this article underpins the ensuing work and the amalgamated project.

Article 4: 'Exploring wellbeing and remote learning using the Delphi method: Engaging teacher education students as co-producers of practice' (White & Sangster, 2022; Appendix IV). This article explored Professional Graduate Diploma in Education (PGDE) student experiences during the COVID-19 lockdown. A Conventional Delphi method was used to engage PGDE students as experts in their own student experience. Findings corroborated the interconnectedness of appraisal, emotion, and wellbeing that had emerged from the previous articles, and provided new insight into the entangled ecologies and coping approaches that inform positive wellbeing and experience for this population.

Article 5: Reconceptualising postgraduate taught student experience through the lens of emotions and well-being: Moving from descriptive methodology to revelatory (White & Ingram, 2023; Appendix V). In the fifth article, I revisited the postgraduate taught (PGT) student experience data, which by this point had been accumulating for three years. As an aggregate set, the wider data pool provided a robust opportunity for exploring the various emotions that inform the PGT student experience. White and Ingram (2023) unfold a rich review of literature exploring the anatomy of emotion as a multicomponent process; the discrete and dimensional role that feelings play in the learner experience; and the emotion-wellbeing-learning relationship. This article introduces a new methodological approach for exploring student experience in higher education and addresses the call within this sector for a paradigm shift in approaches to student wellbeing that centralises emotion.

Taken together, the collection of articles contributes to a study of developing professionals' student experience as an emotion centric process interacting synergistically with wellbeing. As a cohering body of work, they inform three new questions that guide the current project.

1. What is the role of emotion in the developing professional student experience?
2. How do emotion and wellbeing interact to shape the developing professional student experience?
3. How can what I have learned be used to inform an integrated emotion-wellbeing framework for developing professionals in study that functions to foster capacities that promote positive learner experiences.

The following chapter introduces key terms and concepts that define each of the individual articles and how they have been operationalised to cohere within the amalgamated project. Pertinent literature and theory are reviewed, leading to a conceptualisation of student experience as a complex phenomenon informed by three core understandings.

Chapter 2
Foundations of the Study

This chapter provides a foundational understanding of how the individual articles unite as an amalgamated project. 'Foundations' was a deliberate title choice, semantically signalling the importance of this chapter to the wider work, laying the groundwork that supports structural integrity; it does so through an explication of the key terms from each published work and how they have been operationalised as an amalgamated project. My intention is to establish coherence between the articles by detailing how the key terms have been integrated to inform the guiding thesis questions (Cohen et al., 2018). Through this process, I review pertinent literature, examine emotion as a unifying theme, and introduce the supporting theoretical framework, elucidating the interrelatedness and relevance of each term within the field and how my work can be contextualised. The chapter arrives at three core understandings central to my conceptualisation of student experience and that inform the three guiding thesis questions.

One of the dominant challenges I encountered in writing the narrative was determining how or if the key terms articulate and cohere as one project. I felt this was an important focus to address that would strengthen and justify the amalgamation of articles and, when paired with the cohering theme of emotion, would support me in demonstrating doctorateness (Nygaard & Solli, 2021). This demanded critical examination, deliberation, and reflection on the various participant groups, their articulating features, and how emotion as a dominant theme across the articles could be synthesised into one project. I found the process both intellectually challenging and rewarding, stimulating new thinking about the whole as a sum of each part; I emerged more cognisant of the cohesiveness of the works and their contributions to the current thesis questions. My intention in the following section is to convey that sense of cohesion to the reader. Using a two-part structure, I introduce the key terms used in each article and then examine their operationalisation as part of the overarching project.

Adult Learner and Developing Professional

Across the collection of articles, three different adult participant groups are engaged. Article 1 engages a teacher in exploring the relationship between affect, professional development, and professional practice; Articles 2, 3, and 5 engage postgraduate taught (PGT) student populations, including full- and part-time Education, Education Psychology,

Social Work, and Community Education students. Article 4 engages full-time professional graduates (PGDE) enrolled in a one-year teacher education programme.

As an integrated collection, I initially defined the participant groups as *adult learners*. On reflection, however, I felt this was too broad a category and did not concisely convey my knowledge of the field, which Nygaard & Solli (2021) suggest is an imperative of doctorateness. I turned to a review of literature, examining the terms *adult learner*, *adult learning*, and *professional* as a departure point for developing clarity on how or if these varying groups articulate more concisely and could be operationalised as one participant group.

Through my reading, the term 'adult' emerged as a fluid and ever evolving, normatively defined concept (Hoare, 2006; Kasworm, 2010). The 'learner' was defined as a self-motivated and goal-driven individual interested in ongoing informal or formal learning opportunities oriented towards knowledge acquisition (Illeris, 2009; Jarvis, 2005; Knowles, 2020). The literature supported a definition of the 'adult learner' as any individual who fits within the normative constructs of 'adult' and possesses specific learner qualities. Although this classification satisfied my initial definition of the groups as adult learners, I recognised they also shared a distinguishing, and potentially unifying quality in their varying degrees of professional status. Bryson (2014) suggests professionalism is a developing and ongoing phenomenon based on continued engagement with learning. He proposes the *developing professional* includes budding professionals on the cusp of the world of work and those who are at varying places along their professional trajectory. For this group, learning is ongoing and multidimensional in nature, including both informal and formal study opportunities (Sancar et al., 2021).

The term *developing professional* concisely captures the population represented in this thesis, who are at various points along their professional trajectory and engaged in ongoing learning through the pursuit of formal, accredited educational study or workshop-based professional development.

Student and Experience

Operationalising 'student experience' initiated an unanticipated depth of contemplation and examination – particularly of the use of 'student' as I reflected on its application within the amalgamated project. In four of the published works, I examined student experience in a university-based context. However, my focus in White and Malkus

(2019) had been on exploring a teacher's experiences of professional learning in the context of workshops intended to bridge professional development with practice. I questioned whether the teacher participant could be considered a 'student' in this context and felt it necessary to answer the question as a way of examining the cohesiveness of the work and to affirm for myself the articulation of article one with the university-based student experience defined in articles two through five.

My initial review of adult learning literature indicated (Illeris, 2009, 2018; Jarvis, 2005; Kegan, 2018; Knowles, 2020; Taylor and Trumpower, 2021) the words 'student' and 'learner' were used synonymously, suggesting to me that perhaps my line of inquiry was unnecessary, and the teacher could be considered a student. As an example, I found multiple authors were using the terms 'student' and 'adult learner' interchangeably as they explored similar themes relating time, experience, and learning (Kegan, 2018; Knowles, 2020). Not fully content, I decided a more granular level of analysis could be achieved through a review of word etymology (Chambers & Findlater, 1882; Skeat, 1893). Through this examination, I realised the word 'student' could be clearly articulated as a sub-category of the adult learner, which represented an overarching classification of learner type. With this information I returned to my review of literature and found this idea supported (Illeris, 2018; Knowles, 2020). Unlike the overarching 'adult learner' that includes both formal facilitated and informal unscripted learning opportunities, membership to the 'student' sub-category is defined according to formal, systematic, and facilitated learning guided by clear aims and objectives typical of accredited study or professional development (Hoare, 2010; Illeris, 2018; Knowles, 2020; UNESCO, 2022). Having achieved this foundation of understanding, I felt 'student' was an accurate and cohesive term that could be used to define the population of developing professionals represented by the amalgamated project.

Next, I consider the term 'experience'. Jarvis (2005) captures the complexity of experience, defining it as both episodic and longitudinal. It shapes an individual's relationship with the world, having existential implications through the embodiment of mind and body (Maiese, 2017; Varela et al., 2016). As a central driver in learning, the longitudinal impact of experience has a facilitative, deleterious, or transformative potential (Jarvis, 2018). It shapes individual interests, and curiosity, stimulating motivation and engagement, and in this sense demonstrates its facilitative nature. Alternatively, as a foundation of identity, attitudes, beliefs, and values formation, experience can impact learning in extreme ways, triggering defensive reactions and mental resistance when encountering ideas or events that create a disjuncture (Illeris, 2018). Such episodes become debilitating or transformative

depending on the individual's capacities to contend with the urge to resist or be open to the 'unknowing' and the ensuing process of sense-making (Jarvis, 2018; Maiese, 2017).

Understanding and having the capacities to cope with how experience shapes an individual's encounter with learning is significant. It is a way of knowing oneself, which is in and of itself significant in terms of how one interacts with their world (Varela et al., 2016). Equally, understanding how experience shapes learning has implications for the construction of teaching environments that foster engagement and support learners in meeting and embracing transformative learning opportunities (Illeris, 2018; Jarvis, 2005).

Across the articles, 'experience' is a unifying term; each article explores the experiences of participants engaged in professional development (PD). PD includes an array of adult learning experiences designed to enhance an individual's professionalism in areas of, knowledge and intellect; skills; attitudes, and emotional intelligence (Day, 1999; Evans, 2015). It is pursued for a range of purposes, including professional requirements, personal ambition, professional interest, and future employability (Day, 1999; Evans, 2015; Kegan, 2018; Megginson and Whitaker, 2007). The PD in article 1 involves a 2-week workshop; articles 2, 3, and 5 involve a 2–3-year accredited programme of study at masters' level, and in article 4, the PD is a 1-year initial teacher education programme.

PD is a complex and bespoke experience (Day, 1999; Megginson and Whitaker, 2007); its multifaceted nature is shaped according to the multiple layers of identity and intersecting systems within which each developing professional acts (Coneyworth et al., 2020; Evans, 2015; Sancar et al., 2021; Stets & Serpe, 2016). Each article reflects this complexity, exploring the developing professional's student experience as a totality of the person-environment interactions that shape the student journey. Figure 2.1 provides some context, capturing the complexity according to the demographically diverse nature of the participant groups and from which emerges evidence of the fluid and interfacing identities shaping the student experience (male/female; (non)/parent; full/part/non-employed).

Figure 2.1

Demographics of the Developing Professional Participant Population

Article *Demographics*	Article 1	Articles 2,3,5	Article 4
Employment	Full-time	Part-time; full-time; not working	Part-time/ not working
Gender	female	Male and female	Male and female
Age Group	50+	24 – 50+	24 – 50+
Dependents	no	yes/no	yes/no
Type of study	Workshop - professional development	Full time/ part time study 2-3 year programme of study	Full time, 1-yr programme of study
Professional status	In-service teacher	In-service and pre-service professionals	Pre-service teachers

The complexity of the developing professional student experience is unfolded in article three (White & Ingram, 2021) through an examination of PGT student experience as an integrated model. Using Bronfenbrenner's Process-Person-Context-Time (PPCT) model, White and Ingram (2021) explore the PGT student experience as a transactional process acting during person-environment interactions (Bronfenbrenner, 2005; Lazarus, 1991); the nature of which varies for each individual according to the relational meaning construed in accordance with perceived situational demands, constraints, and opportunities leading to an emotion response (Smith & Lazarus, 1990). Through this transactional lens, emotion emerges as having a principal role in defining the experience, and the student is viewed as an active participant, reciprocally influencing and being influenced by the environment within which they interact (Smith & Lazarus, 1990). Explicating the meaning of individual experience involves accessing and making recognisable the subjective and objective dimensions that shape person-environment interactions and the functional and consequential role that emotion plays (Lazarus, 2006b; Van Manen, 2016).

White and Ingram's (2021) integrated model has application across the thesis project and serves to amalgamate the collection by providing a conceptual framework for examining developing professional student experience. As a unified project, the complexity of the developing professional's student experience is characterised in the following way: It is the product of person-environment interactions across multiple systems, shaped according to interacting and entangled biopsychosocial-cultural processes underpinned by emotion with direct implications for wellbeing, learning, and subjective experience (White & Ingram, 2021).

The first half of the chapter has served to unify the collection of works through an operationalisation of key terms that guide the thesis project. These are summarised in Figure 2.2

Figure 2.2

Key Terms

Parameter Paper Number	*Participant Group*	*Professional Status*	*Experience*
Paper 1	Teacher	In-service professional	Workshop
Paper 2, 3, 5	Taught Postgraduate Student (PGT)	In-service/ pre-service professionals	Accredited Study
Paper 4	Professional Graduate Student (PGDE)	Pre-service professionals	Accredited Study
Amalgamated Thesis Project	Students	Developing Professionals	Professional Development Experience

Next, I examine emotion as a unifying theme across the articles and its principal role in the conceptual framework. This leads to the final part of the chapter where I introduce Holism as a foundation of philosophical cohesiveness in the thesis project (Nygaard & Solli, 2021).

Emotion

Across the collection of articles, I explore the role of emotion according to appraisal theory (Lazarus, 1991; Ortony et al., 2022; Roseman, 2013; Scherer, 2009). The theory postulates a reciprocal relationship between cognition and emotion. In doing so, it supports an exploration of the evaluative and mediating role of appraisal in shaping emotion responses; the functional relationship with motivation and behaviour, and the implications for wellbeing and subjective experience (Lazarus, 2016; Scherer, 2019). The following section traces the evolution of my understanding of emotion's complexity (Scherer, 2019). As the depth and breadth of my understanding has evolved, so too has my theoretical framing, moving from an understanding of emotion as a dimensional feeling state (happy, sad, angry…) (Izard, 2011) to emotion as a multicomponent process interconnected with bodily subsystems including cognition, motivation, behaviour, and felt meaning all acting in the interest of wellbeing (Meuleman et al., 2019).

In article 1, I explore the affect-cognition interface, focusing on the affective dimension of emotion; how valence (pleasant vs. unpleasant), arousal (calm vs. excited),

and/or tension (relaxed vs. stressed) inform an individual's subjective feeling state, and the implications this has on the teacher-learner role. This research was guided by the Control-Value Theory of Emotion (Pekrun, 2007), which postulates a relationship between an individual's affect orientation and their appraisal of control and value in each experience. Through this initial investigation, my definition of emotion was couched in dimensional approaches to emotion research, predominantly focused on the affective states that an individual experiences and are expressed as felt meaning (Ortony et al., 2022).

In article 2, my understanding of the reciprocal nature of the emotion-cognition relationship begins to emerge. The research findings highlight the emotive nature of the student journey and the relationship between cognition and emotion according to students' appraisals of challenge or threat and perceptions for coping (Ingram & White, 2020). My work at this time was greatly influenced by research related to theories of stress and coping (Lazarus et al., 1984; Lazarus, 1991; Lazarus, 2006b) through which I explored the biopsychosocial model of challenge and threat (Jamieson et al., 2018) and how this relates to wellbeing according to an individual's capacities to cope with daily life stresses (Deci & Ryan, 2008; Dodge et al., 2012; WHO, 2022). As a result, I began to identify student experience as a product of the orchestrating role of emotion, interconnected with wellbeing and operating as a conduit between mind and body through its relationship with cognition (Lazarus, 1991, 2006b; Maiese, 2014).

Through article 3, I contextualise the inter and intrapersonal qualities of emotion, explicating its phenomenological and distributive nature (White & Ingram, 2021). The phenomenological qualities of emotion, including, valence, amplitude, and salience, are activated during person-environment interactions through a bio-inherited interest in wellbeing (Lazarus, 1991). They shape an individual's relationship with the world and are recognisable as expressed feelings (Gusman, 2020; Lazarus, 2006). The distributive nature of emotion is reflected in the ongoing interpersonal interactions, whereby the phenomenological reality of one individual at a given moment has implications for another through interactions that include the movement of that individual across systems (White & Ingram, 2021).

I use the conceptual thinking unfolded in article 3 to inform my examination in article 4 of the synergistic relationship between the evaluative and expressive qualities of emotion and wellbeing. Evaluations of environmental factors that shape the student experience are judged according to individual wellbeing interests. They inform emotion responses that influence inter and intrapersonal processes relevant to wellbeing, for example, social connectedness, cognitive flexibility, engagement, and productive working (Disabato et al.,

2016; Keyes, 2005; Lazarus, 2006a). These processes implicate an individual's capacity for flourishing according to their impact on subjective and psychological wellbeing (Keyes & Annas, 2009).

My fifth article interrogates the anatomy of emotion as a complex, recursive, and multicomponent process with implications to the student experience. It is informed by Scherer's (2005) Component Process Model (CPM) and supports an exploration of emotion as a hierarchical system, capable of bridging mind and body by harnessing cognitive, motivational, behavioural, and feeling sub-systems in response to perceived threats to wellbeing (Frontaine & Scherer, 2013; Smith & Lazarus, 1990). Using established emotion-appraisal profiles (Lazarus, 2001; Roseman, 2011; Sander et al., 2005; Smith & Ellsworth, 1985) I trace the interactions of bodily sub-systems using the feeling component to guide the exploration. Findings from this article distinguish emotion as a central driver in PGT student experience, illuminating its functional and consequential role and relationship to wellbeing and learning.

Within the overarching project, emotion is defined as a multicomponent process (Scherer, 2005) operating as a nexus between the inter and intrapersonal dimensions, interacting reciprocally with wellbeing and shaping the student experience. Researching emotion through this multicomponent lens has significance as it supports an examination of the multiple layers of interacting systems at work that shape how an individual engages an experience and the implications for wellbeing and learning. In doing so, it addresses calls within Higher Education to centralise wellbeing as a core focus in the student journey (AdvanceHE-QAA, 2021; GuildHE, 2018; Steuer et al., 2008). Advocates recognise wellbeing supports the development of capacities essential for engaging transformative learning experiences. They argue such an approach offers wider benefits to society, environment, and economic wellbeing through the interconnectedness of the individual with family, community, and workplace (Cai et al., 2020; Grau et al., 2017).

Theoretical Framework

A theoretical framework provides a lens through which the research examines a situation; it is what drives a research design (Miles et al., 2018). Like a thumbprint, the theoretical framework identifies and provides an impression of the researcher's epistemological, ontological, and axial assumptions, and subsequent methodological choices (Cohen et al., 2018). In this section, I 'drill down into the assumptions and ideas' used to

frame the various published works and how they serve to unify the overarching project (Nygaard & Solli, 2021, p. 131).

The collective works that define this PhD by publication are driven by an epistemological orientation towards Holism (Smuts, 1926). Holism embraces the interconnectedness of the subjective and objective realities as constituent parts of a whole. The whole is understood as an integrated phenomenon different to each component part, which operates independently but through their interactions, create a new unified whole (Brush, 1984; Járos, 2002). This captures my conceptualisation of the developing professional's student experience as a product of person-environment interactions, shaped according to biopsychosocial-cultural processes operating across multiple systems that define the student journey and through which emotion has a principal role. Researching through a holistic lens therefore requires an exploration of the whole through an examination of the multiple constituent parts and their interrelatedness (Járos, 2002). This has informed my use of meta-theoretical and methodologically pluralistic approaches across the works and favours a moderate holistic pragmatism (Hare et al., 2015) that supports interdisciplinary inquiry for knowledge building leading to action (Kaushik & Walsh, 2019). I have found this an ideal approach for exploring student experience as a complex phenomenon, encouraging a multidimensional lens that has supported an examination of the various parts that create a complex whole (Barker & Pistrang, 2005).

Holism has a rich history rooted in Gestalt psychology (Koffka, 1936) and provides a useful context for studying subjective experience as the representation of an individual's phenomenological reality (Van Manen, 2016). Through Gestalt thinking, subjective experience can be explored as a complex system of interacting parts, defined according to the entanglement of interacting organismic and social systems. One's phenomenology is therefore shaped according to their perceived relationship with these inner and outer worlds, meaning the biopsychosocial-cultural dimensions acting across time that inform experience (Gusman, 2020; Pollio et al., 1997; Sartre, 1985). This provides a rich opportunity for holistically exploring the multiple layers of inter- and intrapersonal interactions and varying identities that shape the student experience.

Using holism, I move beyond traditional, reductionist approaches to student experience as a process of commodification and measures of satisfaction (Biesta, 2006; Feldman & Newman, 2021; Leman, 2021). Such measures are inherently limited through their atomistic exploration of causal antecedents, which minimises the field of understanding (Lazarus, 2016). Although the analysis of these antecedents is beneficial for prompting

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programme and institutional reaction leading to improvement, they assign a stimulus-response interchange to the person-environment interaction (Lazarus, 2016) and engage a hedonic conception of wellbeing according to outwardly controlled environmental and structural factors (Biesta, 2006; Diener et al., 2017). This approach is binary in its conception and does not support a complete exploration of the transactional nature of the person-environment exchange (Bronfenbrenner, 2005; Lazarus, 2016). I argue, as others have (Biesta, 2006; Steuer et al., 2008) that its reductive nature propagates a consumer-oriented perspective ill-befitting the transformative goals of higher education. Alternatively, I propose holism provides a framework for exploring and better understanding the complex and reciprocal nature of the person-environment exchange, elucidating the inextricable link that binds these dimensions together in shaping student experience. Doing so invites a conceptual move beyond the current '*you said, we did'* mantra of higher education (Bunce, 2019).

I propose holism is an ideal approach to gain an individualistic and collective understanding about student experience that can be used to shape practices that improve student experience and meet the broader transformative goals of Education through an ecological view of agency (Biesta & Tedder, 2007) that promotes socio-emotional competencies and favours individual and social wellbeing (UNESCO, 2021).

Conceptualising Student Experience

The purpose of this chapter has been to establish a foundation of understanding for the overarching project. I have examined the key terms and theoretical framework to make observable the phenomenon of interest (Morse, 2010). In doing so, I arrive at three key understandings that inform the developing professional's student experience:

1) Student experience is the subjective expression of felt meaning (Lazarus, 1991).
2) Student experience is a product of biopsychosocial-cultural processes operating during person-environment interactions across various contexts, driven by a bio-inherited interest in individual wellbeing (White & Ingram, 2021).
3) Within the complexity of these operating processes, emotion acts as a super-organising system having control precedence and the capacity to harness cognitive-evaluative-mediational and bodily-expressive sub-systems according to the relational meaning assigned an event, and implicating an individual's felt meaning (Sander et al., 2018; Scherer & Ekman, 2014).

Understanding the developing professional student experience through an emotion-centric lens has significance. It introduces a complexity that moves beyond the conception of student

experience as satisfaction (Pötschulat et al., 2021), making room for a more holistic conceptualisation and study of the multiple layers of interactions and processes at work shaping an experience. This is an important step given that the wellbeing and potential success of this student population are challenged by an array of whole of life factors that shape emotion responses and capacities for coping (Coneyworth et al., 2020). A better understanding of the dynamic processes underpinning the experience provides an opportunity to enact individual and collective agency oriented at supporting transformative learning.

The next chapter engages in a critical examination of the research design, including, the researcher's worldview, theoretical perspective, methodological approaches, and methods employed in conducting the research.

Chapter 3

Methodology

Nygaard and Solli (2021, p. 136) suggest the methods chapter can be used by the doctoral candidate to show how the research design and methods that define each of the published works are 'fit for purpose' and well-suited for answering the overarching thesis research questions. To achieve this objective, I engage in reflective analysis, critically examining the interplay of my worldview with the methodological approaches that connect each article and cohere within the amalgamated project (Corlett & Mavin, 2018). This involves moving beyond a technical examination of the approaches used in each study to a refined examination of how my role as an active participant in the research process has shaped the research framework (Olmos-Vaga et al., 2023).

To facilitate this examination, I use Crotty's (1998) 4-level structure for research design, including, the researchers' worldview, theoretical perspective, methodological approaches, and methods employed in conducting research. The first two levels were introduced in the previous Foundations chapter and are revisited here through a more critical lens as part of my reflective analysis. Following from this, I embark on an in-depth exploration of the methodologies and methods represented in the collection of published works, leading to a review of the research framework that unites each article to address the wider research questions.

Holism leading to a Research Framework

Holism represents a worldview based on complexity. It recognises the whole is different to the sum of its parts and should be explored as a synthesis of bi-directional interactions (Krippner, 1991; Eidelson, 1997). While each constituent part acts independently, defined according to unique qualities and capacities, they are inherently interrelated and unified to shape the whole (Járos, 2002; Polkinghorne & Given, 2021). Through this lens, holism supports the study of a phenomenon in all its complexity, providing opportunity to better understand the actions and interactions of constituent parts as a function of the whole (Polkinghorne & Given, 2021). As the following discussion will unfold, holism reflects my own worldview and consequently permeates my research framework, informing my methodological decision-making according to my conceptualisation of student experience. Holism shares an important relationship with complexity theory; their synergy enables a nuanced understanding of student experience as a complex adaptive system

(Eidelson, 1997; Turner & Baker, 2019). This combined lens supports an exploration of the entangled inter and intrapersonal processes, their relationships and how they synergistically interact to shape student experience.

I can trace my early awareness of holism to my beginnings as a teacher. During this period, I came to appreciate the holistic nature of human development as an entangled process influenced according to the active role of each individual within a bioecological systems framework (Bronfenbrenner & Morris, 2006; Vygotsky, 1978). Through this understanding, I valued the interrelatedness of internal and external processes acting to shape the individual over time (Buhler, 1971). While these processes can be isolated and reduced to an atomistic study of biological, psychological, social, or cultural qualities, my interest was in better understanding how their reciprocal exchange mutually influences the meaning and actions that define student experience. This understanding has evolved over time and has been foundational in my approach to research; through holism, I see the value of reductionism and use it to move beyond technicism and atomistic focus (Miller, 2000). Instead, reductionism through a holistic lens becomes a way of exploring a phenomenon in all its complexity - the inter and intrapersonal processes shaped over time and acting as constituent parts in relation to the whole (Járos, 2002).

To illustrate the relationship between Holism and complexity, consider the analogy of baking a cake. The cake represents a complex system, which makes it challenging to investigate given its intricate nature. Many parts, or ingredients, make the cake; when these are mixed and pressured by environmental factors including time, temperature, and the baker's abilities, they react synergistically, adapting to form new relationships, from which emerges a whole - the cake, which is greater than the sum of each part. Complexity theorists, through their relationship with holism, recognise the value of studying the various ingredients, their histories, environmental influences, and synergistic interactions. In this analogy, holism embraces reductionism as a valuable tool for understanding the nuances of each ingredient, their interactions, and environmental adaptations, leading to a comprehensive understanding of the entire cake – a whole that is more than the sum of each part. Through holism, I have engaged in a meta-theoretical examination of student experience according to various interacting, dynamic systems, and fluid biopsychosocial-cultural processes (Ashcroft et al., 2017; Miller, 2000). This is evidenced across my five published works through which I explore, in varying ways, the internal and external agents interacting synergistically during person-environment interactions. It has supported me bridging theory and practice, through the construction of an understanding that has been both revelatory and action oriented.

However, critics would warn of misconceptions that severely limit holism as a theoretical framework (Fang & Casadevall, 2011; Járos, 2002). Misrepresented as the antithesis of reductionism, this misconception suggests holism involves a global exploration of a given phenomenon that disregards the structural actions and interactions of constituent parts (Járos, 2002). Through this flawed thinking, holism has limitations, centrally is the risk of overloading a research framework leading to limited learning (Fang & Casadevall, 2011; Thomas et al., 2018). I propose current measures of student experience are a good example of the misconception of holism in practice. Student experience is examined as a final product based on degree of satisfaction through which the student is positioned independent of their environment (Pötschulat et al., 2021). Taking this approach, external structural factors define the student experience and make the student reliant on providers for 'packaging' a positive experience. Alternatively, I propose holism invites a study of the bi-directional interactions of all constituent parts including the student as a central actor influencing the experience. From this arises the potential to promote individual and collective agency through which *all* actors gain capacities to shape positive experiences.

Overcoming the limitation of holism as a study of a global phenomenon rests in the understanding that holism embraces complexity and therefore welcomes a relationship with reductionism as a complimentary process that supports the exploration of individual elements as constituent parts of a whole (Ashcroft et al., 2017; Fang & Casadevall, 2011). Complexity theory provides a comprehensive and integrated research framework that is both robust and realistic; it supports a meta-theoretical and methodologically pluralistic approach to researching complex phenomenon (Mazzocchi, 2012). Through the integration of holism and complexity theory it becomes possible to navigate the balance between understanding the whole by exploring the intricacies of the constituent parts, and their relationships as part of a complex phenomenon (Preiser et al., 2018; Turner & Baker, 2019)). Success in this endeavour depends upon researcher openness and awareness, possible through critical reflection of self, and involving an authentic interrogation of the relationship between the individual and world within which they engage (Mortari, 2015). The reflective nature of this retrospective process has provided me the opportunity to examine how my own understanding of holism has evolved from tacit to codified knowledge. This is expounded in the following section, which engages an examination of my evolving research framework and the fit-for-purpose-ness of the research design and methods used in each article, making them well suited for answering the guiding thesis questions.

Stage 1: An Emerging Research Framework

As a novice researcher, holism had a tacit presence in my research designs. It informed my instinctive interest in pragmatism and the potential for exploring a problem in multiple ways. I engaged mixed methods using exploratory typology (Tashakkori & Teddlie, 2010), which provided a prescriptive framework to guide my research process and through which I gained experience working through the complexity of mixing methods (Creswell & Plano Clark, 2018). I found the analytical diversity of each method appealing and valued what could be learned empirically and thematically. The exploratory sequential design supported my use of quantitative data to establish a general understanding, after which I utilised qualitative approaches to explore more deeply the nature of individual experience (Kelle & Buchholtz, 2015). Using a prescriptive typology (Tashakkori & Teddlie, 2010) I learned the direct relationship between a well thought out design, data collection, analysis, and purposeful integration of quantitative and qualitative data strands to address the research problem (Creswell & Plano Clark, 2018). My first two publications, White and Malkus (2019) and Ingram and White (2020) report more fully on the methodological processes and the solution-oriented findings that resulted.

Ingram and White (2020) prompted a reflexive stage in my research journey (Mortari, 2015). I found myself driven to explicate my understanding of the findings that had emerged and subsequently immersed myself in an interrogation of my own knowing. Olmos-Vega et al. (2023) describe this internal dialogue as a route to new understanding and a way of examining researcher positionality. During this time, I stepped away from data collection and engaged in deeper philosophical thinking than I had previously achieved (Ivankova & Wingo, 2018). I benefitted from reflexive dialogue with my research partner, through which we engaged a greater level of interrogation (Olmos-Vega et al., 2023), which in turn aided me in identifying emotion as a central driver in student experience. Ultimately, this period of individual and collaborative reflexivity informed my capacities to articulate my conceptualisation of PGT student experience as a complex phenomenon in which emotion takes an orchestrating role (White & Ingram, 2021). The next section explores this formative period in more detail.

Stage 2: An Evolving Framework: Pragmatism, Mixed Methods, and Phenomenology

As I reflected on my own positionality (Olmos-Vega et al., 2023), I re-examined my worldview and how this was influencing my theoretical perspective and my approach to research. I revisited the theoretically informed notion that 'understanding', and 'action' are

best founded on the interplay of subjective and objective dimensions, and these are necessary in defining truth and reality (Tashakkori & Teddlie, 2010). I regularly asked myself, 'Why?' and 'What does this mean to me?'. This process became confirmatory and revelatory for me, prompting new understandings about the researcher-participant relationship that positively influenced my own research capacities. I realised I had become deeply connected to the student voice that was emerging through the findings; it shaped what I was learning and inspired an increased attachment to the world of my participants, informing my growing sense of responsibility for action (Van Manen, 2016). My vested interest in truly understanding was centred around the subjective, and I began to fully appreciate the theoretically informed idea that worldviews can be both socially shared and individually unique and that this can provide valuable insight into action (Kaushik & Walsh, 2019).

I emerged from this period of reflective interrogation more cognizant of the intersecting centrality of phenomenology and action-oriented research as part of my researcher identity. I could see a phenomenological foundation intersecting with my holist value system, reflected in the community of practice approach (Wenger, 1999) that defined my interactions with colleagues and students; I identified how my own professional learning and decision-making were rooted in my valuing the multiple ideas, perspectives, and interests shared by others. So too, could I identify a pragmatic, action-oriented drive through an inspection of my own character, permeating my relationship with the world at every level - personally, professionally, and through research; I found this recognisable in my inherent orientation to problem-solving.

This reflexive period informed my evolving research framework according to two key ideas centred around the intersubjective dynamics of researcher and participant that support a shared understanding of experience leading to action (Vos, 2020):

1) Action is dependent upon an understanding of shared human experiences, which are discoverable through an exploration of each individual's phenomenological reality (Kaushik & Walsh, 2019; Van Manen, 2016).

2) Knowledge of experience is constructed with the goal of actioning change that is socially and individually situated and will facilitate an individual in managing their existence in the world (Goldkuhl, 2012).

Next, I consider the implications of this reflexive period on my evolving research framework and increasing capacity for dynamic research design.

Stage 3: Phenomenology and a Synergistic Approach to Mixed Methods

My third research project took shape during the COVID-19 lockdown in response to the change in educational provision when previously on campus teaching for universities across the UK was relegated to distance learning (Stanistreet, 2020). I was interested in better understanding student experiences of remote learning for professional graduate diploma in education students (PGDE) engaged online in what was traditionally an on-campus programme. My goal was to design a research framework that mobilised the student voice more centrally than I had previously achieved, to gain a rich understanding of the nature of their remote learning experiences and inform programme-level enhancement. This prompted a new awareness and understanding of the need for dynamic research design to support the paradigmatic and methodological blurring that would meet my phenomenological and pragmatic research interests (Creswell & Plano Clark, 2018; Martiny et al., 2021).

Through a merging of the pragmatic and phenomenological (Vos, 2020), I acknowledged the principal role of the first-person perspective in understanding the nature of student experience, while remaining vested in mixed methods through my commitment to the interplay of subjective-objective dimensions in shaping truth and reality (Tashakkori & Teddlie, 2010). I revisited mixed methods literature exploring how to merge these interests through research design and found Hall and Howard's (2008) synergistic approach appealing; it offered the flexibility necessary to support my fluctuating use of qualitative and quantitative components according to my phenomenological focus, while maintaining the equal value of each method in addressing the research questions.

At this time, through discussion with colleagues, I discovered the Conventional Delphi method (Linstone & Turoff, 1975) and felt it fit the parameters of a synergistic mixed methods approach and was well-suited to my research interests. Its principal focus engaged participants as experts on the topic (Brady, 2015) which met my phenomenological aim of centralising and mobilising the participant voice, while its exploratory sequential structure helped me navigate each stage of data collection and analysis. Engagement with the Delphi method was an effective transitional tool that informed my understanding of the dynamic potential of pragmatism in research design and my role as a researcher in the decision-making process (Creswell & Plano Clark, 2018). The findings from this project are reported in White and Sangster (2022).

My final project in the collection (White & Ingram, 2023) was motivated by Vogt's (2008) guidance that research designs need not be ruled by the binary relationship of qualitative and quantitative approaches and instead should consider the value of multimethod approaches for exploring the nature of a phenomenon. This thinking guided my design of a

dynamic mixed methods approach that favoured a phenomenological exploration of the role of emotion in PGT student experience. I designed a multi-level exploratory sequential research framework using empirically validated emotion prototypes (Shaver et al., 1987) and emotion profiles (Frijda, 1986; Roseman, 2011; Scherer, 2005; So et al., 2015). These were integrated through qualitative content analysis to explore the invariant structures of emotion that inform PGT student experience. The methodological approach and subsequent findings are fully reported in White and Ingram (2023).

The reflective analysis has provided a looking glass through which I have been able to interrogate and better understand my philosophical orientation towards holism and its influence on the pragmatic lens through which my research framework has evolved. Mixed methods have become a defining feature of my studies, used flexibly according to the questions I am asking and with the intention of generating action-oriented outcomes. As the scope of my research has evolved, so too has my capacity for dynamic research design; moving from a reliance on prescribed mixed method typologies (Tashakkori & Teddlie, 2010) to multimethod approaches that support the blurring of paradigms to effectively explore the phenomenological nature of PGT student experience (Miles et al., 2018); in doing so, I centralise the subjective without negating the objective as an important aspect in the research and explore the phenomenon in all its complexity.

The final section of this chapter provides a methodological overview of the research synthesis approach adopted in the amalgamated project and how each article in the collection contributes to addressing the wider research questions.

An Interpretive Phenomenological Mixed Method Research Synthesis Guided by Grounded Theory
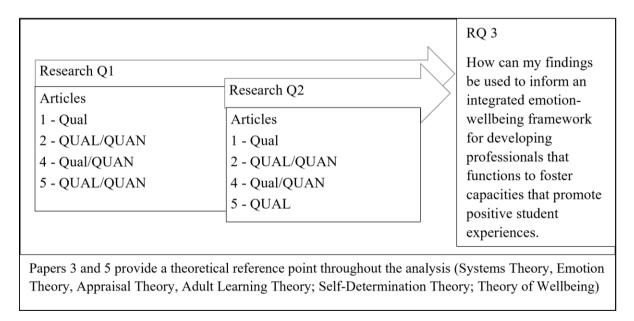
The sequential and chronological nature of the collective works has been significant in my research journey. Individually, each publication represents a research project that has informed my knowledge and action; collectively they inform the following research questions:

1. What is the role of emotion in the developing professional student experience?
2. How do emotion and wellbeing interact to shape the developing professional's student experience?
3. How can my findings be used to inform an integrated emotion-wellbeing framework for developing professionals that functions to foster capacities that promote positive student experiences.

My approach to answering these questions engages an interpretive phenomenological mixed method meta-synthesis and was informed by Grant's (2010) fourth stage of connectivity. I engage principles of grounded theory, including constant comparison, (Charmaz, 2006) to guide the research framework. Grounded theory supports a comprehensive study of a complex phenomenon and pairs well with the use of a meta-synthesis approach to support my ongoing commitment to holism; it supports a scrutiny of each article as constituent parts of a whole, from which the process of comparison, translation, and analysis brings about new interpretations and emergent knowledge about the developing professional's student experience, leading to new theoretical understanding and generalisability that supports action (Zimmer, 2006).

Drawing from grounded theory, each of the articles contributes to the exploration of the research questions in a mixed way. Zimmer (2006) suggests a meaningful synthesis requires judicious organisational and hermeneutic skills by the synthesist. The following section considers these skillsets as I define my approach to synthesis, beginning with Figure 3.1, which provides an illustrative overview of how each article addresses the research questions.

Figure 3.1

An illustrative representation of the data strands informing research questions 1 and 2 and the relationship of research question 3 as an integrated synthesis.

Note. The use of 'qual' and 'quant' and the capitalisation and lower case indicate the priority given to a method (Creswell & Plano Clark, 2018).

Note. Paper 3 is a conceptual paper and therefore does not appear as a data strand; it provides a theoretical reference point throughout the analysis.
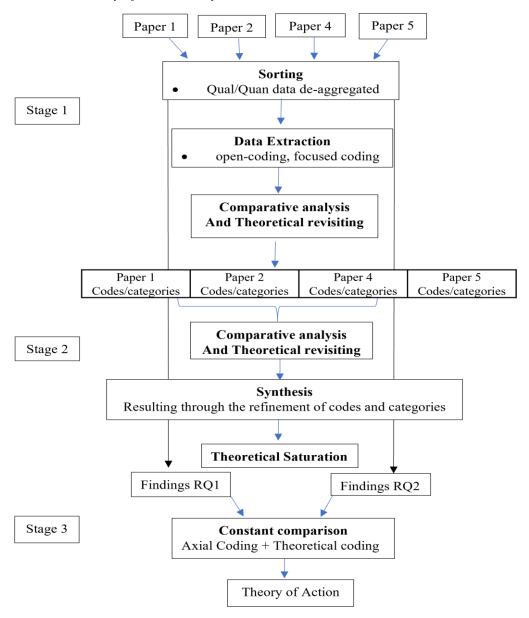
Synthesis is a methodological approach that involves combining, integrating, and synthesising research findings (Schick-Makaroff et al., 2016). Its utility rests with its capacity to inform theory generation and practice (Sandelowski, 2012) made possible through the emerging knowledge that follows from an exploration of the range of qualitative and quantitative findings presented in each article. Through this approach, the qualitative-quantitative binary that traditionally defines mixed methods research is negated in favour of a focus on the study findings that can be assimilated to explore the phenomenon of interest (Miles et al., 2018; Sandelowski, 2012; Vogt, 2008). Sim and Mengshoel (2022) caution that the risk of meta-synthesis is a re-analysis of data rather than an analysis leading to higher abstraction. This understanding highlights a need for careful consideration and transparent communication that supports the reader in judging the utility of the approach and validity of the interpretation and emerging findings (Sandelowski, 2012).

Miles et al. (2018) suggest transparency can be achieved using graphic illustrations that represent the process of analysis and Wolfswinkle et al. (2013, p.3) propose Grounded

theory is one 'disciplined' approach that can support a systematic use of inductive analysis, leading to interpretations that support new insights and recommendations for action. A grounded theory-informed meta synthesis approach supports theory explication and development that is 'thickly descriptive and comprehensive' making it more complete than any of the single constituent studies (Zimmer, 2006). To ensure rigour in my approach, I adopted principles of Grounded Theory to support analytical decision-making and the interpretation of findings leading to theory building (Cohen et al., 2018). In doing so, I adapted Wolfswinkle et al.'s (2013) six-step approach to inductive analysis, drawing predominantly from stages 4 and 5. My process is outlined in Figure 3.2 and includes, data sorting, coding, categorisation, iterative review, and emergence, reflecting key characteristics of a grounded theory design (Cohen et al., 2018). Arrows are used to convey two important design features. Moving from box to box, the blue arrows represent the systematic, step-by-step analysis process and the outer arrows signal the connectedness of each stage, and the ongoing process of iterative review that supports the interpretation and emergence of new insights.

Figure 3.2

An Illustrative Summary of the Meta-Synthesis Process

The analysis progressed in three stages. In the first stage, data sorting was used to separate each article as an individual case for independent analysis, de-aggregating the qualitative and quantitative data within. Doing so supported a unitising approach that allowed me to look closely at small pieces of similar data to initiate the coding process with the goal of gaining new conceptual understanding (Cohen et al., 2018; Sim & Mengshoel, 2022). Each independent data set underwent open and focused coding to identify emerging categories (Charmaz, 2006). At this stage in the analysis, I adopted a data transformation process (Jang et al., 2008) through which quantitative data was converted into narrative description during the coding. This allowed the body of data to be merged using a process of constant

comparison, during which time I returned to the theoretical basis of the research to explore further the meaning that was emerging through the codes and categories (Charmaz, 2006). Articles 3 and 5 provided the theoretical framework that prompted my observations and reflections on what the data was telling me, and how I was making sense of it. This revisiting of theory to inform analysis is a core aspect of grounded theory and an essential step in refining understanding (Cohen et al., 2018). Having completed this process for each article, stage 2 involved pooling the codes and categories that had emerged across all the articles and revisiting the process of constant comparison. At this point, I used axial coding to identify relationships across the categories of data and revisited the conceptual and theoretical background presented in articles three and five to support addressing research questions 1 and 2 (Charmaz, 2006). Here, I found White and Ingram's (2021) integrated framework a useful organising tool to support translating the studies into one another (Anthony et al., 2016). Constant comparison and axial coding provided the lens for identifying core themes within each facet of the framework. Stage 3 involved a final level of analysis using the emergent data from the previous stage. Axial coding was used in partnership with theoretical referencing to bring the data together, identify relationships, and achieve theoretical saturation, leading to a theory of action to address research question 3 (Charmaz, 2006).

The purpose of this chapter has been to examine the fit-for-purpose-ness of the research design and methods adopted in each article and how they cohere as an amalgamated project, informing a methodological approach that is well suited for answering the current thesis research questions. In doing so, I have unfolded a reflexive examination of my evolving research framework, tracing my philosophical commitment to holism and burgeoning researcher identity that embraces a pragmatic, phenomenological, and action-oriented approach to exploring student experience.

The next chapter provides an opportunity to examine the overarching contributions of each article, aims, significance, originality, and limitations, and how, taken together, they inform the current thesis questions.

Chapter 4

The Headlines

This chapter is the beginning of the second half of the narrative, which aims to demonstrate how the articles articulate as a cohesive argument according to the findings that have emerged. I found the structuring of this half of the thesis challenging. To achieve my aim, I felt an alternative format to the traditional Results, Discussion, and Conclusion chapters typically used in a thesis was needed. I had two different sets of articulating but separate results to convey, and I felt each warranted a discussion of its own to impart the higher level of abstraction emerging through the synthesis. However, my confidence in adopting a unique structure wavered. I relied on Smith's (2015) advice to take authorial control in the narrative process, and in doing so, I determined to construct two results chapters, each woven together through discussion. In keeping with the story-telling nature of the retrospective narrative (Nygaard & Solli, 2021) and as a way of signalling the interconnectedness of the two chapters, I have strategically organised and titled them as, 'The Headlines' leading to the 'The Cover Story'.

'The Headlines' provide a synopsis of each article, including the significance, originality, limitations, key findings, and how what was learned contributes to the current thesis project. The chapter finishes with an illustrative representation of the initial stage of the meta-synthesis, depicting a collation of themes emerging from the individual articles organised using the various facets of White and Ingram's (2021) integrated framework. My goal through this chapter is threefold; first, to clarify the individual contribution of each publication as a stand-alone entity; second, to establish how each one informs an aspect of my evolving understanding of emotion and its relationship with wellbeing as part of the developing professional's student experience. Third, to provide evidence of the similarities across each article to establish a foundation for understanding 'The Cover Story'. The Cover Story unfolds a critical examination of how the data translate into one another to address the three overarching thesis questions, leading to new insights that have relevance and significance in the fields of higher education and adult learning.

The Headlines Unfolded

Article 1: White, W., & Malkus, A.J., (2019). Teacher emotion matters: Bridging teacher learning and mathematics instruction in the early years using an affective instruction design. *Teacher Education Advancement Network*, **11(4), pp 21 – 34.**

Significance and Originality

   White and Malkus (2019) report on research exploring the relationship between teacher affect, professional learning, and instructional practices. The research is significant in multiple ways; it responds to calls for a better understanding of factors that inform teachers' professional learning and capacities to enact new practices leading to improved outcomes for learners (Day & Chi-Kin Lee, 2011; Stigler & Hiebert, 2009). In doing so, it engages with a paradigm shift in the field of education research, adopting cognitive mediational perspectives vested in better understanding human experience as a path to improvement (Lazarus, 2016; Schutz et al., 2006). This is a move away from traditional lines of inquiry, contextualised by a behavioural science perspective and motivated by mechanistic solutions that target teacher effectiveness (Hargreaves, 2007; Saunders, 2013).The theoretical framework that underpins the study is guided by the affect-cognition interface and control-value theory (Fiedler & Beier, 2014; Pekrun et al. 2007); it engages an integrated approach that is welcomed by emotion researchers as a pathway to theoretical and empirical progress in the field (Pekrun et al., 2007).

   White and Malkus (2019) adopt a field study design to observe the physical and social environment through an in-situ examination of emotions experienced in conjunction with teacher recollections following each teaching episode. This is a unique approach within the collection, that embeds a higher degree of ecological validity than the survey-based studies used in articles two and four. It provides multi-method avenues for exploration, analysis, and triangulation, including, behavioural, linguistic, and self-reporting evidence (Ortony et al., 2022; Wellington, 2015). In doing so, White and Malkus (2019) achieve a rich exploration of the entangled affect-cognition relationship in mathematics teaching and learning, effectively bridging what mathematics researchers refer to as the psychological and social divide (Hannula et al., 2016).

   The use of the affective instructional framework (AID) was central to the originality of the research. Pekrun and Linnenbrink-Garcia (2014) suggest teachers receive very little training on the relationship between affect and learning; AID addressed this by embedding affective structures in the planning (Buff et al., 2011) and in doing so effectively bridged

professional learning, instructional delivery, pupil affect, and reflection in a way that enabled

the change in practice and initiated a cycle of positive teacher-pupil affect.

Limitations

While this case study complements the collective findings, as a standalone design, it

has limitations. On one count, the representativeness, and generalisability of the case comes

into question (Cohen et al., 2018; Wellington, 2015). Without wider investigation, the

findings may be contested - attributed to the novelty associated with the instructional change

and its influence on affect experiences without any lasting impact on individual affect.

Second, limitations may be associated with the researchers' own accuracy of analysis.

Inherent in interpretation is the influence of mood, previous experiences, and outcome

interests (Wellington, 2015).

Key Learning and Relevance to the Wider Project

As part of the amalgamated project, White and Malkus (2019) highlight the

entanglement of social-cultural conditions and intrapersonal processes that can promote or

thwart a developing professional's psychological growth, engagement, and wellness (Ryan &

Deci, 2017, p. 3). In doing so, the article addresses the three research questions in multiple

ways. First, it highlights the intrapersonal role of emotion, influenced by culture and time,

according to the teacher's beliefs about teacher practice and reliance on prior learning. Study

findings reveal a reciprocal interaction between affect and cognition according to beliefs,

goals, and self-efficacy (Pekrun et al., 2007); this has implications for emotion components

including, motivation, behaviour, and feeling, which are observable through the teacher's

improved engagement with social constructivist strategies, her improved sense of control

over lesson design, and changing affect orientations. Second, it brings to attention an intra-

interpersonal transaction that has implications for wellbeing; the functional changes in

teacher motivation, feeling, and behaviour that occur during the intervention phase of the

study reflect similar changes in the children, evidenced as a sort of contagion between teacher

and pupils (Becker et al., 2014; Burgess et al., 2018). These changes triggered a new cycle of

positive affect during mathematics lessons, with positive implications to wellbeing. The

teacher demonstrated newfound confidence and a sense of self-efficacy in the teaching

environment, which was reflected in her feeling empowered (Ryff & Keyes, 1995). This had

The use of the Affective Instruction Design (AID) contributes valuable learning applicable to research question 3. AID provides three core elements: a resource bank, a planning structure, and reflection. These elements supported the teacher in knowing what to do, how to do it, and how to evaluate the outcome for ongoing growth. Collectively, they increased her emotion awareness, sense of control and subjective value for learning and teaching new approaches, which gave rise to positive affect. These findings garner insight into key elements for consideration in the design of an emotion-wellbeing framework.

Article 2: Ingram, R., & White, W. (2020). Student emotion matters: Understanding and responding to taught postgraduate student experience through the lens of well-being. *Journal of Perspectives in Applied Academic Practice*, **8, (1). pp 3-14.** *DOI:* **10.14297/jpaap. v8i1.426**

Significance and Originality

White and Ingram (2020) explore student experience as a complex journey closely related to wellbeing. The research is significant in three specific ways. First, it brings attention to a student group whose experiences are typically overlooked through a sector-wide misconception they are a 'one-size fits all needs' population (Coneyworth, 2020). In doing so, it responds to calls for a reconceptualization that acknowledges the role of wellbeing as a factor in PGT student experience (GuildHE, 2018; Houghton & Anderson, 2017; Steuer et al., 2008). Second, the article builds on previous research that highlights the complexity of the student journey (Muijs & Bokhove, 2017; Steuer et al., 2008; Temple, et al., 2014) from which it introduces a novel framework that captures this complexity as an interplay involving disciplinary, institutional, and culturally informed facets and their interaction with wellbeing. Third, the exploratory sequential mixed method design engages student voice and achieves a more robust and systematic examination than previous surveys of satisfaction oriented towards performance indicators and market-driven interests (Creswell & Plano Clark, 2018). Qualitative data systematically builds on quantitative findings to achieve a deeper level of exploration (Seale, 2010) that exposes the unique, multifaceted factors that inform PGT students' experiences. A complete explication of the findings is provided in Ingram and White (2020).

Limitations

Multiple writers cite researcher bias and participant openness and honesty as potential limitations in case study design (Cohen, et al., 2018; Denscombe, 2017; Wellington, 2015). Researcher bias can inform transcription and selection of data according to researcher interests, values, and beliefs (Denscombe, 2017). To adjust for this potential, two coders engaged in the analysis, using a coding framework that provided a uniform approach for both coders to sort and identify themes in the data (Cohen et al., 2018). Critical discussions provided opportunity for scrutiny, and, at times, re-analysis to confirm interpretations of the qualitative data (Creswell & Plano Clark, 2018).

The asymmetric position of power that a researcher has can influence participant openness and honesty in responses (Cohen et al., 2018). This has relevance for White and Ingram (2020) through the interactions of the researchers as teachers on the programmes involved in the study. To address this concern, strategic steps were taken in organising the focus groups to avoid pairing teacher/student groupings. Likewise, scripts were used to build in positive, welcoming dialogue intended to build rapport and promote participants feeling at ease and valued for their contributions to the study (Wellington, 2015).

Key Learning and Relevance to the Wider Project

White and Ingram (2020) build on the previous article, advancing my understanding of the relationship between cognition and emotion in adult learning contexts and illuminating the association with wellbeing. The findings highlight stress-related appraisal processes at work during person-environment interactions. These evaluate an event as a benefit, challenge, or threat according to an individual's goal interests and perceived capacity for coping. The study found interpersonal interactions a central feature of the appraisal process, associated with different aspects of university life, and acting as demands or resources to mitigate or provoke appraisals of threat. Likewise, time and energy emerged as two wellbeing attributes under strain during the student journey and acting as situational constraints or drains to coping resources (Anisman, 2014). The findings are fully divulged in White and Ingram (2020) and have had impact in the Division of Education and Society at the University of Dundee, where they have informed programme level developments to promote student sense of belonging and identity; improved teaching and learning using feedback, and pastoral and programme level supports.
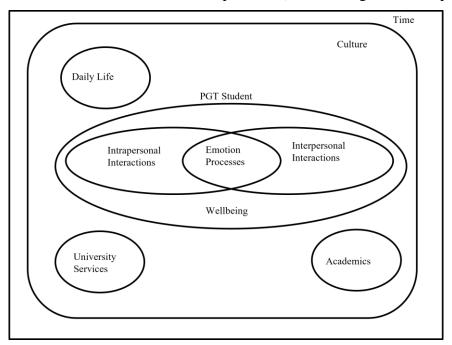
Significance and Originality

White and Ingram's (2021) conceptual article builds on articles one and two, using what was learned to inform a metatheoretical appraisal of the multiple layers of interactions, systems, supports, and intrapersonal processes that facilitate or hinder the student experience, from which an integrated conceptual framework emerges (Figure 4.1). The framework captures White and Ingram's (2021) definition of student experience as 'a product of person-environment interactions occurring across eco-systemic facets of the student journey, giving rise to emotion responses that inform wellbeing (p. 1463). At the heart of the framework sits emotion processes; these drive the person-environment interactions taking place across various hierarchically arranged contexts that are networked and nested around the focal individual and have implications for wellbeing.

Figure 4.1

An Integrated Framework for PGT Student Experience (White & Ingram, 2021, p. 1463)

The article is both significant and original through its multi-layered analysis and emerging conceptual framework, which attune to the labyrinth of systems and biopsychosocial processes that inform PGT student experience; it unites bio-psychological and socio-cultural constructs to establish a holistic conception. The writing introduces a narrative case (Gelman & Basboll, 2014) that encourages an examination of the utility and

1 relevance of the model through a reflexive examination of its application. Through this

2 design, White and Ingram (2021) advance calls to centralise wellbeing in student experience

3 (Steuer et al., 2008; GuildHE, 2018) and amplify its importance through the lens of

4 sustainability (Grau et al., 2017; Sady et al., 2019) proposing there is wider potential for

5 impact through the cascading effect created by the individual's connectedness with family,

6 community, and profession.

7   The value of White and Ingram (2021) was acknowledged in the peer-review process,

8 where one reviewer commended both the quality of the theoretical review and the attention

9 the writing brings to an '*often forgotten*' student group.

10

11 *Key Learning and Relevance to the Wider Project*

12   White and Ingram (2021) illuminate the complex nature of the PGT student journey.

13 It is both a bespoke and distributed experience informed by biopsychosocial-cultural

14 processes shaped over time and interacting bi-directionally during person-environment

15 interactions. The rich exploration of literature informs new learning related to the emotion-

16 appraisal process and its influence on wellbeing: It establishes emotion as a central construct

17 in the PGT student experience, defining how an individual responds to and engages with the

18 world; emotion interacts with cognition according to stress-related appraisals of challenge,

19 benefit, threat, and perceptions of coping. The dynamic interactions of these appraisals

20 influence individual wellbeing through their impact on psychological and social functioning.

21   The learning shaped through the production of this article is significant to the wider

22 project as it supports a deeper understanding of the nuanced complexities of systems,

23 processes, and interactions working to shape the developing professional's student

24 experiences. This is significant in terms of the analysis process as it provides a holistic lens,

25 sign-posting the multiple avenues for exploration necessary to address the research questions

26 and overcome Denscombe's (2017) criticism that a conceptual framework will curtail

27 analysis through a restricted focus that limits attention to features in the data.

28
29 **Article 4: White, W. & Sangster, P. (2022). Exploring wellbeing and remote learning**
30 **using the Delphi method: Engaging teacher education students as co-producers of**
31 **practice.** *Journal of Teacher Education and Educators*, **11(1), 7-32.**

32

33 *Significance and Originality*

34   This study was provoked by the COVID-19 lockdown, when traditional on-campus

35 Professional Graduate Diploma in Education (PGDE) programming was restricted to the

remote learning environment. The motivation for the research was an interest in better understanding the environmental factors and stressors defining PGDE students' experiences given the new programming dynamics.

White and Sangster's (2022) work is original within the collection through its use of a Conventional Delphi method, which was chosen as an ideal design to address paradigmatic interests and to overcome geographical constraints and case study limitations. The Conventional Delphi method supported us in combining our phenomenological and pragmatic interests and made it possible to engage a geographically dispersed student voice using both quantitative and qualitative measures (Fink-Hafner, 2019). Using the Delphi method overcomes two limitations encountered in the previous articles. The design pre-empts the power imbalances typically associated with personal, social, and professional contexts thereby increasing the likelihood of open and honest responses (Denscombe, 2017; Vogel et al., 2019). At the same time, it addresses case study design limitations, including potential inaccuracy in transcription processes and 'soft' data collection (Denscombe, 2010, p. 63; Fink-Hafner et al., 2019).

The study contributes to the collective strength of the articles, building a body of findings to promote generalisability (Cohen et al., 2018). It adds new insight into the host of environmental factors, existing across eco-systems and acting as constraints, demands, or resources to inform the student experience. As an example, the study highlights the impact of daily life stressors such as financial strain and how remote learning eases that stress for students. The study brings to attention *controllability* as a core appraisal variable influencing evaluations of benefit, challenge, or threat, and introduces *confidence* as a wellbeing attribute that is strained during the student journey. The findings are fully disclosed in White and Sangster (2022). They have had impact at the programme level, contributing to PGDE programme development through adaptive ecologies, including, for example, the move to a blended programme structure, designed to support in-study and external-to-study factors with the intention of supporting positive student wellbeing and experience.

Limitations

While the Conventional Delphi Method was a strong choice in multiple ways: it met the parameters demanded by the research; garnered high participation; ensured equal voice, and provided relevant feedback (Fink-Hafner, 2019), it had limitations. The iterative nature of the design led to participant attrition, which is a common limiting factor and can

negatively impact achieving consensus (Brady, 2015; Fink-Hafner, 2019). More significant, though, was the inability to engage in rich discussion. Its lack of capacity for elaboration limited the depth of learning that could come from the analysis. To gain a rich understanding of the lived experiences of participants, future uses of this method would require adaptation to allow for increased discussion, thereby maximising its value.

Key Learning and Relevance to the Wider Project

My learning from this research project is two-fold. First, I learned the Conventional Delphi Method was a valuable tool for gaining an understanding of the most prevalent and shared inter and intrapersonal factors that influence the PGDE student experience. As Jarvis (2007) suggests, students are experts in their learning experiences; through them, the study findings home-in on specific situational constraints, demands, and resources that influence their motivation and behaviour with implications for the student journey. The findings have relevance to the wider project, enhancing my understanding of the emotion-wellbeing relationship. This study improved my awareness of factors that inform appraisal outcomes of challenge, benefit, or threat; highlighted their interconnectedness to other organismic sub-systems (motivation and behaviour); and provided insight into resources that support coping.

I also learned that I value an approach that supports elaboration. The structure of the Conventional Delphi method restricted the potential for discussion, which I realised during the analysis phase was a limiting factor that I had not previously encountered in articles one and two. Reflecting on my use of this method, I feel the structured approach successfully mobilised and centralised student voice but curtailed a rich exploration of core themes and the potential for gaining insight into valence, intensity, and salience of emotion experience that I had previously achieved through the preceding projects. This has reinforced for me a need to continue to develop my research framework to mobilise and fully capture student voice in multiple ways. I believe this will involve a more strategic design that achieves a balance between the participant-researcher roles, from which I feel resides the potential to garner maximum understanding.

Article 5: White, W., & Ingram, R. (2023). Reconceptualising postgraduate taught student experience through the lens of emotions and well-being: Moving from explanatory methodology to revelatory. *International Journal of Educational Research*, *117*, **102135.**

Significant and Originality

In this fifth publication, White and Ingram (2023) introduce an original, multi-level methodological approach for analysing and understanding PGT student experience as an emotion-centric process. In doing so, the authors move beyond confirmatory and descriptive measures of student experience as satisfaction (Leman, 2021). They examine the anatomy of emotion and uncover a complex array of feeling states that interact synergistically with appraisal, motivation, and behaviour to impact wellbeing and define the PGT student experience. The work builds on a synthesis of emotion research (Lazarus, 1991, Parkinson, 1996; Scherer, 2005; Scherer & Ekman, 2014) from which Scherer's Component Process Model (CPM) (2005) has a dominant influence.

White and Ingram (2023) contribute to the analytic generalisability of the body of work, which, as Yin (2009) suggests, is significant in terms of generalising a theory. Given the current focus on wellbeing in Higher Education (AdvanceHE-QAA, 2021; GuildHE, 2018; Maguire, 2020; Pollard et al., 2021) the article makes an innovative knowledge contribution to sector-wide discussions in UK higher education, highlighting emotion as a central determinant in PGT student experience, asserting a need for holistic approaches to wellbeing that maximise positive impact for students (Advance-HE, 2021; Feldman & Newman, 2021; GuildHE, 2018; Razak, et al., 2017).

Limitations

The study is limited by its uni-directional exploration of emotion as a multicomponent process leading to a subjective representation (Meuleman et al., 2019). This representation negates the possibility of dynamic sub-system interactions within the emotion process (Meuleman et al., 2019) and therefore curtails a full exploration of their functional and consequential role in student experience. This is a clear line of inquiry for future consideration that would further strengthen understanding about the role of emotion in student experience.

Key Learning and Relevance to the Wider Project

White and Ingram (2023) provide a rich review of emotion research and in doing so explore the anatomy of emotion in a way not previously captured in the collection. This examination further enhances the researchers' conceptual understanding of the role of emotion in shaping PGT student experience. Findings highlight the super-organising capacity of emotion during periods of heightened stress, and its interactions with wellbeing and learning. Emotion harnesses organismic sub-systems including cognitive, motivation, feeling, and behaviour with consequences to engagement, attention, decision making, and social connectedness (Compton et al., 2004; Robinson & Thomson, 2021; Tyng et al., 2017).

This understanding has significant implications in the wider project, informing a more granular analysis of emotion's role and relationship with wellbeing across the collection of articles. The multi-level methodological approach provides an avenue to examine the anatomy of emotion and explore its functional and consequential roles, garnering insight necessary to address the current thesis questions.

The cohesive body of published works presented in this chapter represents an accumulation of knowledge and understanding cultivated over time and through an iterative, expanding, and reflexive process (Corlett & Mavin, 2018). They have provided an avenue for exploring the role of emotion and its relationship with wellbeing across a variety of participant populations.

Bridging the Headlines with the Cover Story

Here, I begin to unfold the relationship between the articles using the findings arrived at through the initial stage of the meta-synthesis. Wolfswinkle et al. (2013) describe this initial layer of analysis as an opportunity for critical review and new insights arrived at through a process of open and axial coding. For each article, key findings were extracted, illustrative quotes were checked for verification of the findings, theoretical reference points were noted, and emerging categories were captured (Wolfswinkle et al., 2013). To support the analysis process, White and Ingram's (2021) integrated framework of PGT student experience (Figure 4.1) and Scherer's (2019) Dynamic Architecture of the Component Process Model (CPM) (p. 32) act as organisational tools. White and Ingram (2021) inform the thematic structuring using components from their integrated model: emotion process, inter and intrapersonal factors, wellbeing, and ecological systems. Scherer (2019) provides insight into the various components that define the emotion process: goals, appraisal variables,

1 resources, demands, and sub-systems. Anthony et al. (2016) highlight the value of

2 theoretically informed studies as useful tools in the analysis process. The frameworks support

3 identifying the architecture of emotion process components, inter- and intrapersonal

4 processes and eco-systems that shape the student experience. Table 4.1 provides an

5 illustrative overview of the sub-categories that emerged during the coding process for each

6 article; these have been organised into themes according to White and Ingram's (2021)

7 integrated framework.

8 **Table 4.1**

9 Sub-Categories emerging from the analysis of individual articles and organised into themes
10 using White and Ingram's (2021) Integrated Framework

11

THEMES	Emotion Processes	Intrapersonal Factors	Interpersonal Factors	Wellbeing	Ecological Systems Engaged
Sub-categories within each theme	Goals	Values/Beliefs	Social connectedness	Coping	Microsystem (Inter and intrapersonal factors)
	Appraisal Variables	Prior Learning		Competence	
	• *Controllability*		Relational		Mesosystem
	• *Certainty*	Confidence	Connectedness	Autonomy	
	• *Coping*				Exosystem
	• *Agency (Blame/praise)*	Identity	Material Connectedness	Environmental Mastery	Macrosystem (Culture)
	• *Taste (Valence)*	Self-efficacy			Chronosystem (Time)
				Sense of purpose	
	Demands/Resources				
	Organismic Sub-systems				
	• *Motivation*				
	• *Behaviour*				
	• *Feeling*				

12

13

14 　　　Appendix VI provides a synthesis of the findings from each article and the

15 metatheoretical insights gained through the analysis (Anthony et al., 2016; Wolfswinkle et

16 al., 2013). Ritzer (1991) highlights the importance of meta-theory in arriving at new

17 perspectives, attaining a deeper understanding of theory, or as a foundation for theory

18 development. Using a meta-theoretical approach, my aim is to build a deeper understanding

19 and gain perspective on the role of emotion and its relationship with wellbeing as a central

20 determinant in the developing professional student experience. Appendix VI captures the

21 comparison between articles using key findings organised according to the themes and sub-

22 categories identified in the data extraction phase of stage 1 analysis. These have been paired

23 with an overview of the extant theory revisited during this initial stage of analysis. Together,

24 they inform the organising framework used to achieve the synthesis of data in stages 2 and 3

25 of the analysis. The following chapter examines the process of data translation during stage 2

1   and 3, using extracts from the stage 1 analysis to inform the final interpretation, synthesis of

2   data, and new insights that include an emotion-wellbeing model and framework for action.

Chapter 5

The Cover Story

'The Cover Story' presents and critically discusses the thesis findings arrived at through the tertiary level of analysis and related to the three overarching questions. The emerging insights serve to inform the originality and contribution of the thesis, consolidating the connectivity between the published works and the amalgamated project to create a sum of knowledge and understanding that is greater than the individual parts (Nygaard & Solli, 2021).

The meta-synthesis approach supports the translation of data into one another (Zimmer, 2006) and was guided by principles of grounded theory; it involved an iterative process defined by content analysis, coding, constant comparison, and theoretical revisiting (Charmaz, 2006; Wolfswinkle, 2013). The primary focus during the synthesis was to develop an explanatory model to possibly provide insight into the findings reported in the collection of articles and that would speak to constructing a framework that could support developing professionals' student experiences. Process mapping supported the analysis, providing a visual tool to elucidate the emerging themes and relationship between emotion and wellbeing in support of theory generation (Ligita et al., 2022).

The first two-thirds of this chapter are used to address the first two research questions:

1. What is the role of emotion in the developing professional student experience?
2. How do emotion and wellbeing interact to shape the developing professional's student experience?

In the final third of the chapter, I use what has been learned from the first two questions to address the third research question:

3. How can my findings be used to inform an integrated emotion-wellbeing framework for developing professionals that functions to foster capacities that promote positive student experiences.

RQ 1 and 2. Emotion's Role and Relationship with Wellbeing in the Developing Professional Student Experience

The initial stage of analysis disclosed at the end of the previous chapter presents a summary of the sub-categories emerging across the articles (Table 4.1). Appendix VI provides a full presentation of key findings from each article associated with each sub-
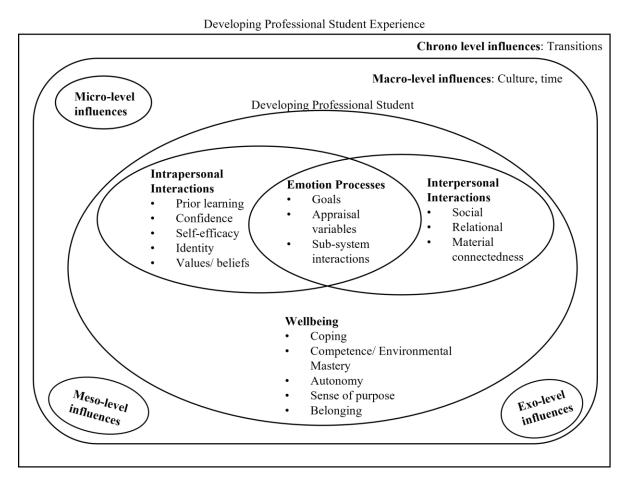
1 category and organised by theme. These are accompanied by parallel perspectives captured in

2 the meta-theoretical analysis to support a comparison. The dominant theme emerging from

3 this layer of analysis is that the developing professional student experience is a structurally

4 complex and dynamic process. The value of this layer of analysis is the revelation of sub-

5 categories operating within each theme, as illustrated in Figure 5.1. This brings new

6 understanding and insight into the composition of each facet of White and Ingram's (2021)

7 framework and suggests its relevance and application to a wider student population than

8 originally proposed.

9 **Figure 5.1**

10 An integrated framework for exploring the complexity of the developing professional's
11 student experience.

Developing Professional Student Experience

Chrono level influences: Transitions

Macro-level influences: Culture, time

Developing Professional Student

Micro-level influences

Intrapersonal Interactions
- Prior learning
- Confidence
- Self-efficacy
- Identity
- Values/ beliefs

Emotion Processes
- Goals
- Appraisal variables
- Sub-system interactions

Interpersonal Interactions
- Social
- Relational
- Material connectedness

Wellbeing
- Coping
- Competence/ Environmental Mastery
- Autonomy
- Sense of purpose
- Belonging

Meso-level influences

Exo-level influences

12

13

14 The second stage of analysis to be unfolded in this chapter engages a process of

15 translating the data into one another; it is supported by Scherer's (2019) Dynamic

16 Architecture of the Component Process Model (CPM) (p. 32) and White and Ingram's (2023)

17 Projected Emotion Profiles (p. 7); both are used to examine and inform the interpretation of

18 emotion findings to better understand the interaction between emotion and wellbeing.

Through the analysis process, Scherer's (2019) model becomes an antecedent to my own process map in that it distinguishes each component in the emotion process: event, appraisal, sub-system interactions, expressed feeling, and constructed meaning. From this model, I use my analysis to distil and define the anatomy of each component related to the target population. The findings lead to an emerging Emotion-Wellbeing Process Map (EWPM) which brings new insight as a bespoke map depicting how emotion and wellbeing may interact in shaping developing professionals' student experience.

Goal-Based Appraisals Drive the Emotion Experience

An appraisal is a driving mechanism in the emotion process (Lazarus et al., 1984; Moors et al., 2013; Scherer, 2019); this is a theme that emerged through the findings. It reflects how an individual construes their relationship with the world according to their own wellbeing interests, relating specifically to personal goals, beliefs, and concerns (Frijda, 2007; Lazarus et al., 1984; Sander et al., 2018). Appraisal researchers postulate varying numbers and types of appraisals are ongoing during person-environment interactions and influence the variability of emotions experienced; their type and role are temporally and functionally dependent upon where each is viewed in the emotion process, acting as an antecedent, mediator, or consequence of emotion states (Fontaine & Scherer, 2013). These ideas were captured in the findings, which reveal six types of ongoing appraisals operating in different roles to elicit emotion responses at varying stages in the emotion process (Table 5.1).

Table 5.1

Six Appraisal Types Shape the Emotion Process

Antecedent	Mediator	Consequence
• Goal Appraisal (Relevance and congruence)	• Controllability Appraisal • Certainty Appraisal • Coping Appraisal	• Agency Appraisal (Blame/Praise -self, other, object) • Taste Appraisal (Liking/disliking/ pleasant/unpleasant)

The following section presents findings to support an examination of the role of appraisals in shaping developing professionals' emotion experiences and, in doing so, discerns the entanglement of inter and intrapersonal processes operating across various eco-systems to define an emerging process map that depicts an emotion-wellbeing relationship driving developing professionals' student experience.

Antecedent Appraisals

Antecedent appraisals elicit and fuel the emotion process (Scherer, 2009). They

reflect an individual's interpretation of the relational meaning of an event according to

personal goal interests (Lazarus, 1991; Scherer, 2019). Findings presented in Table 5.2

provide insight into the interactions of study-related goals, antecedent appraisals, and their

interconnectedness with motivation and feeling states. The table includes quotes, showing

how annotations were used in the analysis process to decipher the relational meaning of each

event and provide evidence of the interactions between sub-systems. They are used here as a

vehicle for demonstrating the depth of interpretation and inviting an examination of the utility

of the approach.

Table 5.2

The Interactions of Goal Appraisals, Feeling States, and Motivation

Article	Annotated Extract	Goal Appraisal	Goal Type/ Motivation	Feeling
White & Malkus (2019)	"[I] use worksheets to make sure they can pass the [state]tests." **(externally controlled goal)"** **(goal relevance)** "[I feel] anxious [and] teaching math is not fun". **(negative emotion response)**	Relevance	Achievement/ Externally controlled	Anxious, unhappy
Ingram & White (2020)	'I have become a huge fan of the regular online meetings **(positive emotion response)**. Being able to drop in if I have any questions or if I am confused about anything related to the Masters – I can bounce ideas off and get support from my tutor.' **(goal congruent) (internally controlled)**	Congruence	Activity Clear rationale/ non-controlling	Energising, positive affect
White & Ingram (2023)	'You don't know how this person [interacts] or what is their [teaching] style so you are fumbling in the dark **(goal relevance)** and also not having met my classmates in the 3rd module well it made it very difficult because I didn't have anyone to bounce ideas off **(feeling isolated)** and to get support and those kinds of things. It had a very negative impact **(goal incongruent, negative affect).'**	Relevance and congruence	Activity Non-autonomy supportive	Isolated, negative affect

Goal congruence is one antecedent appraisal used to judge an event as conducive or

obstructive to goal interests. It interacts closely with the affect and behaviour sub-systems,

eliciting emotion valence (pleasant vs unpleasant) and action tendencies including, for

example, avoidance, defensiveness, helplessness, and excitement (Frijda et al., 2014). This is

captured in the third quote, where the lack of connection to the tutor and peers elicits

attentional focus followed by a goal incongruent appraisal, and feelings of isolation paired

with helplessness. The participant's inability to '*bounce ideas off and get support'* reflects

their judgement of the importance of social interaction as a foundation for learning (Meijs et al., 2016); in this case it signals a negative impact to sense of belonging that threatens resilience, with implications to the learning journey based on the experience being '*very difficult*' and having '*negative impact*' (Jacob et al., 2019; Wenger, 2018).

Ryan and Deci (2017) suggest climate and conditions are significant factors determining the relationship between goals and motivation. They specify that autonomy supportive climates and non-controlling, clearly rationalised goal-related conditions stimulate motivation with positive implications to learning and wellbeing (Ryan & Deci, 2020). A closer examination of the first and second quotes in Table 5.2 provides opportunity to examine the impact of climate and the conditions underpinning goals. The second quote in Table 5.2 (Ingram & White, 2020) provides evidence of an autonomy supported climate paired with competence supportive conditions leading to positive emotions and motivation. The regular online meetings have a clear rationale and are appraised by the student as goal conducive with positive implications for feeling and motivation that can be deciphered from the student's enthusiasm: being '*a huge fan*' of the online meetings and the social support they provide; '*I can bounce ideas… and get support*'. These statements suggest the online meetings are valued as an opportunity for feedback, which is a core element in learning and favours environmental mastery, two conditions that inform positive wellbeing (QAA, 2018; Ryan & Deci, 2020).

Alternatively, the first quote (White & Malkus, 2019) demonstrates how a controlling climate influences the emotion process and has a negative impact on motivation and decision-making. It reveals a goal-relevant appraisal, with '*worksheets*' deemed necessary to '*pass the tests*'. The teacher's goal is externally controlled by mandated standardised tests with implications for her motivation based on the feelings of anxiety they elicit. Anxiety is an achievement related emotion that drives motivation to resolve the threat and can lead to maladaptive decision-making (So et al., 2015). In this case, it has a negative implication on the teacher's instructional approach, which relies on '*worksheets*' for teaching mathematics. The external controls threaten the teacher's sense of autonomy and competence with consequences to her motivation and wellbeing (Ryan and Deci, 2020); this is reflected in the teacher's lack of value for her instructional practice, '*teaching mathematics is not fun*'.

Analysed in this way, these seemingly straightforward statements reveal a fluid and dynamic interaction between emotion, wellbeing, and learning. Beginning with goal appraisals, the interacting emotion components inform decision-making, motivation,

engagement, and resilience - all core factors in adult learning that contribute to wellbeing, learning, and student success (Illeris, 2018; Naylor, 2022; Pekrun et al., 2019).

Mediating Appraisals

Mediating appraisals are *stimulus evaluation measures* (Scherer, 2009) used to gauge the goal-thwarting or supporting potential of situational demands, constraints, and resources. Their configuration informs the relational meaning of an event as a benefit, challenge, or threat and fuels adaptive responses in the other emotion components, leading to an individual's felt meaning and subjective experience (Lazarus, 1991; Roseman, 2011). The complexity of these interactions has been captured in the findings and is unfolded in the following sections of writing, beginning with Table 5.3, which summarises an array of biopsychosocial demands, constraints, and resources prevalent in the developing professional's student journey. These provide a foundation for the ensuing discussion, which examines the role of three distinct appraisal variables that emerged in the synthesis, controllability (individual autonomy to act), certainty (assuredness in how to act to maintain goal pursuit), and coping potential (capacity to access and use available resources to maintain goal progress) functioning to register an event as a threat, challenge, or benefit, and propelling the emotion process with implications for an individual's agentic orientations.

1 **Table 5.3**

2 Situational Demands, Constraints, Resources

Article	Situational Demands	Constraints	Resources
White & Malkus (2019)	-Accountability Measures **(interpersonal, exo-level)**	-Prior Knowledge **(intrapersonal)** -Self-Belief **(intrapersonal)** -negative affect **(intrapersonal)** -low subject-related value **(interpersonal, microlevel)**	-Internal motivation **(intrapersonal)** -Affective Instruction Design Training **(interpersonal, microlevel)**
Ingram & White (2020)	-Coursework **(interpersonal, exo-level)** -Volume of new information **(interpersonal, exo-level)** -Balancing work and study life **(interpersonal, microlevel)** -Lack of access to learning materials **(interpersonal, microlevel)** -Ineffective communication/ support * Poor quality feedback **(interpersonal, microlevel)**	-Lack of access to support services **(interpersonal, microlevel)** -Lack of communication **(interpersonal, microlevel)** -Time **(interpersonal, macrolevel)** -Lack of energy **(intrapersonal)**	-Peer Support **(interpersonal, microlevel)** -self-belief **(intrapersonal)** -Visualisation **(intrapersonal, macrolevel)** -Social interaction **(interpersonal, microlevel)** -Internal Motivation **(intrapersonal)** -Tutor correspondence (email) **(interpersonal, microlevel)** -Tutor support: scheduled 'drop-in' **(interpersonal, microlevel)** -Positive Feedback **(interpersonal, microlevel)** -Clear, efficient University Communication **(interpersonal, microlevel)** -Guidance from support services **(interpersonal, microlevel)**
White & Sangster (2022)	-Technology Issues **(interpersonal, mesosystem)** -Long hours of online working **(interpersonal, exosystem)** -Too much screen time **(intrapersonal, microsystem)** -Organisation and management needed to study online **(intrapersonal, microsystem)**	-Prior Experience studying online **(intrapersonal)** -Limited teacher interaction **(interpersonal, microsystem)** -Time **(interpersonal, macrolevel)** -finding information **(interpersonal, microlevel)** -Sitting all day **(intrapersonal)** -Lack of clear, consistent communication **(interpersonal, microlevel)** -Lack of Energy **(intrapersonal)** -Low confidence **(intrapersonal)** -Lack of active learning **(interpersonal, microlevel)**	-Flexible access **(interpersonal, meso-level)** -Recorded inputs **(interpersonal, meso-level)** -Time **(interpersonal, macrolevel)** -Family support **(interpersonal, microlevel)** -Peer Support **(interpersonal, microlevel)** -Formal Feedback with clear next steps **(interpersonal, microlevel)** -High attendance **(interpersonal, microlevel)** -Lecturer's Presence **(interpersonal, microlevel)** -Taking a break **(intrapersonal)**
White & Ingram (2023)	-Daily life (living costs) **(interpersonal, microlevel)** -Study/work/family balance **(interpersonal, microlevel)** -Social Environments **(interpersonal, microlevel)** -social and peer pressures **(interpersonal, microlevel)** -Isolated working **(interpersonal, microlevel)**	-Lack of tutor communication **(interpersonal, microlevel)** -Lack of university services support **(interpersonal, microsystem)** -Self-imposed pressures related to achievement **(intrapersonal)** -Lack of access to on-demand support **(interpersonal, microlevel)**	-Internal motivation **(intrapersonal)** -self-belief **(intrapersonal)** -Peer supports **(interpersonal, microlevel)** -Social interaction **(interpersonal, microlevel)** -Quality tutor-student relationships **(interpersonal, microlevel)** -University services support **(interpersonal, microlevel)** -Tutor Supports **(interpersonal, microlevel)** -Programme-level support **(interpersonal, microlevel)**

3

An additional content analysis was carried out in the examination of demands, constraints, and resources, and is shown using the bracketed, bold font; this was used to support a dissection of the inter and intrapersonal qualities of these factors and provides useful insight into the person-environment dynamic that is bespoke to the developing professional's student experience. It highlights an array of contexts across the five ecological systems captured in the stage 1 analysis and previously presented in Table 4.1. These contexts contribute to the inter- and intrapersonal factors that influence an emotion experience. The content analysis garnered interesting insight into the inter- and intrapersonal qualities of these factors. As an example, the demands category highlighted an insightful pattern of interpersonal factors associated with what Knowles (2020) would describe as 'culture shock'. Culture shock emerges through macro-level influences; many adult learners arrive to professional level study accustomed to teacher directed instruction and are ill prepared for the andragogical practices that define adult learning, including autonomy and independence (Knowles, 2020). This possibility emerges in the synthesis according to demands students experience associated with, *volume of information*, *lack of on-demand support*, *coursework*, and *balancing life with study*. This finding is in line with postgraduate taught student experience data that highlights similar findings leading to student attrition (Leman, 2021). Paired with the *time* and *energy* constraints that also emerged as findings, the culture shock arising through unfamiliar expectations and in contrast to prior learning may tax the body's systems sufficiently to inform the appraisal of these events as a threat and elicit negative emotion responses that are goal thwarting.

Situational demands represent factors that are a threat to goal progress, taxing the body's systems beyond coping potential; constraints, on the other hand, have the potential to be goal-thwarting but can be overcome through sufficient access and use of resources (Lazarus et al., 1984). Resources provide opportunities for coping, or in the absence of a constraint, are a benefit to the individual's goal-directed interests (Lazarus et al., 1984; Sander et al., 2005). Coping is essential for overcoming the stressors that define daily life (World Health Organisation, 2022) and for developing professionals, whose study experiences are already under strain through the multiple sub-identities (Turner, 2006) that divide their time, attention, cognitive, emotional, and social resources, this is a significant factor to explore and understand. The analysis of findings evidences the importance of control and certainty as core evaluative measures that inform coping potential and are directly influenced by interpersonal factors including autonomy and competence supportive

1 environments, social supports, and intrinsic motivation. Table 5.4 provides contextual

2 evidence to support further examination.

3

1 **Table 1.4**

2 Mediating Appraisals: Control, Certainty and Evaluation Outcomes with Sub-system and Wellbeing Indicators

Article	Annotated Extract	Appraisal	Stimulus Type	Evaluation Outcome	Feeling State	Motivation/ Action Tendency	Wellbeing Indicator
White & Malkus (2019)	'We cover so much more content' (**goal congruent**) and 'I can see how my consistent use of the vocabulary in the lessons really made a difference in the kid's use of vocabulary (**high control/ certainty**). [I feel] 'exhilarated' (**happy emotion**) and I 'understand lesson design' (**autonomy/ intrinsic motivation**)	Goal Congruent High Control High Certainty	Resource (Competence and Autonomy supportive)	Benefit	Exhilaration	Intrinsic high/ Engaged	Autonomy Competence Relatedness
Ingram & White (2020)	'It is comments like, "You need to expand on this" when [the essay] is two words under the maximum word limit. This is frustrating (**anger family/ negative valence**) because I can't expand it (**goal incongruent**) because I have run out of available words (**low controllability/ high demand/ defensive**). This sort of comment is not necessarily useful because they don't suggest where I could clip one thing to expand another (**constraint/ uncertainty**).'	Goal incongruent Low control Uncertain	Constraint (competence non-supporting; externally controlled)	Threat	Frustration	Intrinsic high/ Defensive	Self-doubt Lowered self-esteem Dissatisfied
White & Sangster (2022)	'Monotony of sitting at a computer all day' (**low control**); 'tiresome routines' (**goal incongruent**)	Goal incongruence Low control	Demand (autonomy and competence non-supporting; externally controlled)	Threat	Despondent Discouraged	Low/ Avoidance	Dissatisfied Social isolation
White & Ingram (2023)	There is also the anxiety about performance (**fear emotion**) where you think you speak up in class and you sound a certain way, they might expect more from you (**uncertainty**) and might fail people when it comes to that.'	Low Certainty	Constraint (identity– non-supportive)	Challenge or Threat	Anxiety	Intrinsic high/ Defensive	Self-doubt Lowered Self-esteem (identity)

3

The quotes provide insight into the fluid and dynamic interplay of control and certainty appraisals, feelings, action tendencies (preparation for action) and wellbeing. Take, for example, extract two (Ingram & White, 2020); a goal incongruent appraisal is evident through the participant's evaluation of the quality of feedback as being '*unhelpful*', making it obstructive to the activity-related goal interests. Subsequent negative evaluations of control and certainty emerge, reflected in the participant's inability to control word limit restrictions and uncertainty in knowing, '*where [to] clip one thing to add another*'. Combined these appraisals suggest an evaluation of the event as goal thwarting, with low coping potential, and giving rise to feelings of frustration. Frustration is a combined negative emotion involving disgust and fear and arising in response to an unpredicted and seemingly unjust event (Sander & Scherer, 2014). Frustration has implications for the developing professional student experience through the interaction of motivation and wellbeing associated with a defensive action orientation, decreased self-esteem, and emerging learned helplessness (Breuer & Elson, 2017).

The findings confirm that appraisals of control and certainty share an important relationship with learning and wellbeing, interacting with affect, motivation, and behaviour to inform interest, autonomy, self-efficacy, engagement, resilience, and task commitment (Hong et al., 2021; Shuman & Scherer, 2014). These are learner characteristics that establish a foundation for flow states (Jarvela, 2011) and, arguably, are essential to the developing professional student experience. The remaining quotes in Table 5.4 provide illustrative evidence, illuminating the importance of these appraisal variables in developing professionals' student experience. In the first quote (White & Malkus, 2019) the teacher's sense of control is evidenced through her use of vocabulary to achieve an outcome: '*I can see how my consistent use of vocabulary… made a difference [in the teaching process]*'. The quote reflects the positive relationship between the teacher's professional learning and burgeoning sense of confidence, autonomy, enthusiasm, and agency in instructional decision-making. Moreover, it captures a transformed perspective – new meaning-making through a reflection on her new practices (Mezirow, 2000). In this case, her new instructional approaches become a resource that benefits her goal-related progress and promotes a positive emotion-wellbeing experience leading to transformational learning. Alternatively, in the third quote (White & Sangster, 2022), '*monotony*' and '*tiresome routines*' indicate negative affect associated with discouragement and boredom. Both feeling states negatively implicate learning. Discouragement is elicited through appraisals of low situational control and rising uncertainty related to goal-pursuit. It signals declining motivation and task commitment,

while boredom is characterised by a lack of meaningful engagement (Sander & Scherer, 2014; Westgate, 2020).

These extracts advance the unfolding examination of the emotion-wellbeing relationship; the evidence they provide is significant for the developing professional student experience through an emerging relationship between the evaluative quality of emotion (goal-related, control and certainty appraisals) and the agentic potential of the developing professional. Agency defines the capacity of an individual to evaluate and act in a situation and is informed according to the interactions of a three-part dynamic based on past and present experiences, paired with future interests (Biesta & Tiddens, 2007). Agency is a developmental goal of adult learning, defined in part by growing self-awareness (Tennant, 2018) and arguably a necessity for professionals who, by nature of their professional status, hold leadership responsibilities requiring agentic capacities. The findings have delineated factors related to each of these dimensions, illuminating demands and constraints that interfere with achieving agency according to the measures of goal congruence, controllability, and certainty. As evidenced using the annotated extracts (Table 5.2 and 5.4) evaluations are informed by past and present experiences and are oriented towards future interests that then propel an emotion process and directly inform agentic potential through their influence on decision-making, motivation, feeling states, and behaviour.

While demands signal low control, high uncertainty, and insufficient resources to cope with an event and lead to threat-based appraisals, constraints represent challenges that may be overcome through resource support that facilitates coping. Freire et al. (2020) suggest the need for flexible approaches to coping and access to a repertoire of resources that can be combined strategically in response to situational demands and constraints. The range of resources identified in the analysis supports what Kleop et al., (2009) define as being variable, bespoke, and ever-changing according to biopsychosocial-cultural contexts. Interestingly, however, the content analysis suggested the resources could be broadly classified according to autonomy and competence supportive environments, social support, and intrinsic motivation. Table 5.5 provides illustrative evidence to support the unfolding discussion. Findings suggest the resources facilitate the use of problem-focused or accommodative-emotion-focused coping to overcome situational constraints (Yih et al., 2020). In doing so, they elicit emotion responses and sub-system interactions that promote agentic orientations with positive implications for wellbeing and learning through their increased self-belief, sense of control, and ongoing goal pursuit (Meijen et al., 2020; Ryan & Deci, 2017).

1 **Table 5.5**

2 Challenge-Coping Relationship

Article	Annotated Extract	Resource Type	Coping Potential	Emotion Experience	Wellbeing Indicator
White & Malkus (2019)	AID supported [me] **(positive coping/ competence supportive)** 'understand lesson design' and to 'really see who "gets it" and who is still struggling'.	Competence supportive	Problem-focused	Empowerment	Autonomy
Ingram & White (2020)	'There were times when I would give up **(low motivation/ withdrawn)** because I would be looking for something and not be able to find it and I have nobody to ask **(two-stage coping)**. It had a very negative impact **(discouraged)**.'	Competence non-supportive	Low coping	Discouragement	Isolated
White & Ingram (2023)	'The most significant thing actually is my friends **(resource)**. Every lunchtime we go for a walk …past {--- Hall]; we visualise graduating **(emotion-focused coping)**. It has kept us going even at times when we felt ready to drop out **(constraint/ autonomy supportive)**… It's been the peer group.'	Autonomy supportive	Emotion-focused	Optimism	Belonging
White & Ingram (2023)	The work is very challenging but rewarding and enjoyable.	Intrinsic Motivation	Emotion-focused	Joy	Satisfaction

3

4   Competence supportive environments are facilitative through the provision of
5 structure and feedback that informs an individual's sense of environmental mastery and
6 learning leading to growth (Ryan & Deci, 2017). The contrasting impact of competence
7 supportive environments on coping potential is evidenced through the first two annotated
8 extracts. The first quote (White & Malkus, 2019) provides evidence of problem-focused
9 coping, enabled through the AID resource, which provides the structural support necessary
10 for the teacher to act. This informs a positive emotion experience and increased agency,
11 evidenced through the teacher's learning and new-found ability to '*really see who gets it and*
12 *who is still struggling*'. Alternatively, in the second quote (Ingram & White, 2020), the
13 participant's inability to locate information and '*having nobody to ask*' suggests a non-
14 supportive competence environment, low coping potential, with negative impact on agency.
15 This extract also provides evidence of the unfolding approach to coping, paired with the
16 flexible use of varying strategies and the implication on learning and wellbeing (Freire et al.,
17 2020; Lazarus et al., 1984). The participant indicates '*looking for something*' and when that
18 fails, attempts to access social support but finds '*nobody*'. At this point, coping resources are
19 exhausted; the participant has invested high effort and attentional focus moving from one
20 resource to the next (Lazarus et al., 1984), and this has led to the heightened emotion state of
21 discouragement. Discouragement reflects a feeling of self-doubt and perceived trivialisation
22 of the invested effort; it negatively impacts motivation and encourages avoidance behaviours
23 to the detriment of learning (Sander et al., 2005; So et al., 2015).

1   Alternatively, the third extract (White & Ingram, 2023) demonstrates how flexible

2   coping can support overcoming a potentially goal-thwarting event. In this case, the demands

3   of study are overcome through social support and visualisation. Social support provides a

4   sense of solidarity that informs positive role identity verification and promotes social and

5   relational connectedness (Ryan & Deci, 2020; Stets & Burke, 2014). *Visualisation* is an

6   action oriented, problem-focused coping strategy that can be used purposefully to resolve

7   emotional distress (Lazarus, 1991). In this case, flexible coping informs optimism and

8   intrinsic motivation towards ongoing goal pursuit.

9   Further findings suggest that overcoming challenge is a significant part of the

10   developing professional's student experience that has a positive and transformative impact on

11   wellbeing and learning; it informs self-awareness and a sense of empowerment characteristic

12   of flourishing (Keyes & Annas, 2009) and inspires the construction of new ways of thinking,

13   acting, and understanding (Mezirow, 2000; Hoggan et al., 2017). Table 5.6 provides

14   illustrative evidence.

15   **Table 5.6**

16   Overcoming Challenge Supports a Positive Emotion-Wellbeing Outcome

Article	Annotated Extract	Wellbeing Indicator	Emotion Experience
Ingram & White (2020)	'The process has really made me feel that I am capable of more than I realised **(self-awareness)** and that is something that is going to stick with me for the rest of my life. It's been very empowering **(positive feeling)**.'	Self-actualization	Empowerment Enjoyment
White & Ingram (2023)	This is my first Masters learning so I'm not sure how difficult this is in reference to other Masters programs **(uncertainty/ social comparing)**, so I came in pretty blank slate, but the process has really had me crawling and struggling **(challenge)** and I think there is value in that - that's where growth and learning happens **(transformation)** and it has been great to be a part of it from the start and now helping to improve.	Self-efficacy Transformation	Gratitude

17

18

19   A closer look at extract two (White & Ingram, 2023) suggests the shifting and

20   changing nature of each sub-system through this process of transformation, highlighting

21   '*struggling*' as a part of the experience. Struggling indicates disjuncture combined with an

22   openness to sense-making and a need for coping (Usher, 2018; Lazarus et al., 1984); it

23   engages the emotion process in an effortful way, resulting in new learning that is

24   transformative (Hoggan, 2017).

25   The examination of findings in this section illuminates the complexity of the emotion

26   process, its relationship with wellbeing, and how the coordinated actions of various emotion

27   components can shape experience. Findings reveal four appraisal variables: goal-

relevance/congruence; controllability; certainty; and coping act to elicit and fuel the emotion

process and shape the developing professional student experience through their influence on

feeling, motivation, and behaviour sub-subsystem components. They interact reciprocally

with inter- and intrapersonal factors that act as resources, demands, or constraints, either

benefitting, challenging, or threatening goal pursuit. Benefits see steady goal-directed

progress; challenges and threats elicit positive or negative feeling states according to their

goal-thwarting potential. Challenges and threats can be overcome through flexible access to

and use of a range of resources that are autonomy and competence supportive, stimulate

intrinsic motivation, and offer social support. The flexible use of a range of resources aids

coping and controllability to re-establish goal progress and support wellbeing, and

transformative learning.

Consequence Appraisals

Working as part of the emotion process, two final appraisal variables with a

propelling influence, emerged in the findings. These appraisals arose as a tertiary response to

feeling states that emerged as part of the initial stimulus evaluation process. They are defined

in the literature as appraisals of agency and taste that evaluate responsibility for the event and

judge the event's intrinsic pleasantness (Sander et al., 2018). They have implications for the

emotion process, either signalling the resolution of a perceived challenge or threat, thereby

returning attentional focus to goal-directed interests, or initiating a looping trajectory based

on an ongoing concern. In the latter case, the emotion process remains engaged and will

continue to distract cognitive resources in the interest of regulating the emotion experience to

navigate the event towards a more desirable outcome (Uusberg et al., 2019). Table 5.7

provides illustrative evidence.

Table 5.7

Consequence Appraisals: Taste and Agency

Article	Extract	Appraisal (Agency)	Appraisal (Taste)	Emotion Experience
White & Malkus (2019)	'The concepts are too difficult…they don't mean anything to the children'.	Other - Blame	Disliking	Discouragement
Ingram & White (2020)	'There was very poor communication… Given the high demands of the course and given that most students work part time to be able to afford to study, this is frustrating.'	Other- Blame	Disliking	Frustration
Ingram & White (2020)	'The level of guidance from disability services has been great - can't fault it. I felt very supported.'	Other - Praise	Liking	Happy
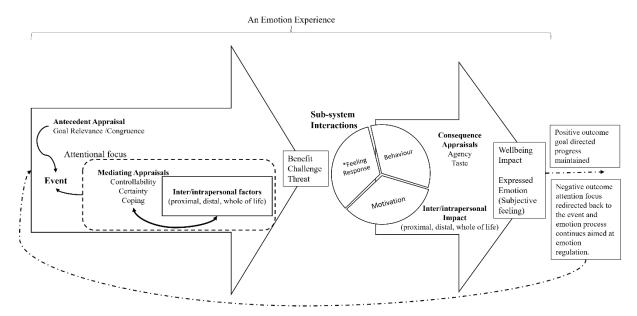
1   The positive appraisal of 'praise' and 'liking', noted in the third quote (Ingram &

2   White, 2020) reflects the individual's positive encounter with *'the level of guidance'*, finding

3   it supportive of goal-directed progress. Alternatively, the first and second quotes are

4   indicative of negative appraisals of taste and agency. In both cases, the emotion process

5   remains engaged, initiating a looping trajectory that demands ongoing attentional focus and

6   distracts the actions of sub-systems away from goal directed interests.

7

8   *An Emergent Process Map Depicting the Emotion-Wellbeing Relationship*

9   The synthesis of findings has provided an opportunity to examine the anatomy of the

10   emotion-wellbeing relationship not previously achieved by the individual articles; it brings to

11   attention a host of variables operating within each sub-category of White and Ingram's

12   (2021) integrated framework, acting to inform the developing professional's student

13   experience. It has drawn together multiple layers of discourse, revisited theoretical

14   foundations, emotion constructs, systems theory, identity theory, adult learning theory, and

15   human development theory to arrive at an emergent emotion-wellbeing process map that

16   drives the developing professional student experience. The map captures what appraisal

17   theorists have identified as the Component Process Model of Emotion (Scherer, 2019) and

18   applies the theoretically and empirically grounded theory to distil its relevance to the

19   developing professional's student experience. A core strength of the emerging emotion-

20   wellbeing process map is its potential to distinguish emotion from its misnomer 'feeling'

21   state (Scherer, 2005) and to sensitise those most interested in supporting student wellbeing to

22   the relevance of the emotion process as an underpinning driver shaping student experience.

23   The proposed map is illustrated in Figure 5.2.

24

Figure 5.2

An Emerging Emotion-Wellbeing Process Map Indicating the Developing Professional
Student Experience

The next section of writing addresses thesis question three and, in doing so,
extrapolates the key learning emerging from research questions one and two to demonstrate
how the findings can be used to inform practice and future research (Sandelowski et al.,
2006).

**RQ3. How can my findings be used to inform an integrated emotion-wellbeing
framework for developing professionals that functions to foster inter and intrapersonal
capacities that promote positive student experiences.**

The thesis findings address the role of emotion and its relationship with wellbeing;
they highlight the importance of goal relevance, congruence, control, certainty, and coping as
core evaluative measures relevant to students. These appraisals determine the quality of an
event and establish its relational meaning as a threat, challenge, or benefit to their goal
progress. They implicate wellbeing through their influence on feeling, motivation, and
behaviour sub-systems, with consequences to inter- and intrapersonal dimensions of the
individual that are reflected in appraisals of agency (praising or blaming) and taste (liking or
disliking).

Central to the findings is the important role of person-environment factors that act as
demands, constraints, or resources to thwart or facilitate individual agency in the developing
professional's student journey, disrupting goal-pursuit during periods of heightened stress

with implications for wellbeing. Biesta and Tedder (2007) highlight the importance of agency in supporting an individual in their goal pursuit. In line with the thesis findings, the authors sign-post agency's relationship with control and highlight the implications for motivation. It is a state of being that is achievable through an understanding of biopsychosocial-cultural structures and context, paired with individual self-awareness (Biesta & Tedder, 2007). This is a significant idea that has relevance to *how* the findings can be used to address the final research question and *who* this may be of interest to.
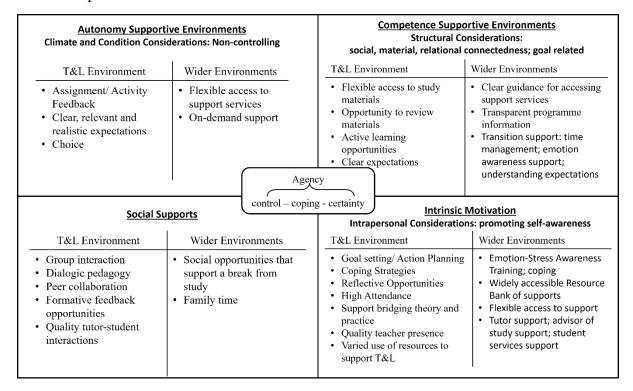
The findings provide insight into an array of biopsychosocial-cultural contexts, proximal, distal, and whole of life, relevant to the developing professional student experience, that can be facilitative or debilitating in the emotion process; based on their facilitative potential, these have been categorised into four adaptive ecologies: autonomy supportive environments; competence supportive environments; internal motivation; and social support. The findings suggest the factors within these categories, when used as resources, induce an agentic orientation based on appraisals of control, certainty, and coping (Code, 2020). Through this understanding, it becomes possible to construct a framework 'for making priori decisions' (Ryan & Deci, 2017, p. 12) about inter and intrapersonal factors that will promote a positive emotion-wellbeing experience driven by an agentic orientation. The proposed framework can be used by those engaged in the design, development, and delivery of adult learning programmes to identify structural, contextual, and in-person factors relevant to developing professionals' student experience, aimed at promoting agentic orientations characteristic of a positive emotion process. Agency is a significant factor that supports an individual to effectively navigate person-environment interactions; it is indicative of a positive emotion-wellbeing relationship, and supports flourishing in life (Deci & Ryan, 2008) making it a desirable capacity for developing professionals in study and beyond. Figure 5.3 depicts the proposed integrated emotion-wellbeing framework, populated with a bank of resources extracted from the findings and organised across the four adaptive ecologies.

Figure 5.3

An Integrated Emotion-Wellbeing Framework to Support Positive Developing Professional Student Experience

Contribution in Adult Learning Contexts

As a contribution to the field of adult education and professional development, the findings are both confirmatory and revelatory; they provide unique insight into emotion's role and relationship with wellbeing in shaping the developing professional's student experience. In response to the growing body of literature documenting a rise in stress and anxiety amongst student and professional populations (Champion Health, 2023; Evans et al., 2018; Hughes & Spanner, 2019) the findings offer clear evidence of the deleterious impact of unresolved negative feeling states, through their wider connection to behaviour, motivation, and wellbeing. More significant though, they illuminate the transformation that takes place when an individual can overcome challenges and threats encountered and the necessity of this process in promoting deep learning. They sign-post a host of resources that support this process, eliciting an agentic orientation through their influence on appraisals of coping, control, and certainty. The findings help to address what Scherer (2005) describes as the misnomer of 'feelings' prevalent in social science research and instead make explicit the multicomponent nature of emotion, through which *feelings* provide an avenue for accessing a rich exploration of each component (Moors et al., 2013).

The Integrated Emotion-Wellbeing Framework addresses higher education imperatives seeking to support individual growth, transformation, and sustainability through a focus on individual wellbeing (AdvanceHE-QAA, 2021; Houghton & Anderson, 2017; Hughes & Spanner, 2019). The framework provides a tool to address what Houghton and Anderson (2017) describe as attitudinal and structural barriers to embedding wellbeing in teaching and learning environments; further, it centralises wellbeing as the responsibility of all, including students as active participants shaping their own student journey. In doing so, the framework aims to overcome the reductionist approach to wellbeing that relegates it as a concern of counselling services and provides a resource to support a 'whole-university approach to enhancing' student wellbeing (Houghton & Anderson, 2017, p. 14).

AdvanceHE-QAA (2021) recognises the interconnectedness of student success, wellbeing, and sustainable development goals. Within this dynamic, they identify emotion as a central component in self-awareness competencies that inform knowledge, skills, and attributes needed to cope with the challenges of the 21st century (p. 3). The various factors listed in the fourth quadrant of the integrated emotion-wellbeing framework promote agentic orientations that foster intrinsic motivation and, in doing so, build in-person characteristics that favour the development of self-awareness capacities.

The following concluding chapter provides an opportunity to highlight the significance of the thesis project, and how it contributes within wider scholarly discourse, its limitations, and implications for future research.

<div align="center">

Chapter 6

Conclusion

</div>

I begin this final chapter reflecting on the challenges and discoveries that have informed my PhD journey before moving on to consider the contributions made by the thesis project, its limitations, and directions for future research. I finish with a summary of key learning that has emerged through the project.

A Reflection on 'Becoming'

I began the process of writing the retrospective thesis with a vivid awareness of the fluid and iterative nature of learning and how this shapes an individual's '*becoming'* (Scanlon, 2011). I return to this idea as a final way of illuminating how my professionalism and research identity have been shaped. As much as this PhD journey has been about evidencing 'doctorateness' through originality and knowledge production, disciplinary belonging, publishability, and independence, it has by default, and without my initial awareness, become a process of personal discovery. Lee (2011) recognises this as part of the process of becoming; one that involves '*coming to know'* paired with '*coming to be'* (p. 154). While the unfolding chapters have provided insight into my 'coming to know' about the role of emotion and its relationship with wellbeing in the developing professional student experience, it is here that I pause and consider my own 'coming to be'. In doing so, I find an infallible interconnectedness between '*knowing'* and '*being'*.

In the early chapters of the thesis, I examine my journey to the PhD, reflecting on my developing professionalism and burgeoning research identity. Through Chapter three I trace the foundation of my interest in holism as a worldview to my early career as a teacher and reflect on its permeating role in shaping my research agenda. These early chapters provided me an opportunity to examine my beliefs, values, and decision-making processes. At times during this period, I felt solidly aware of my own identity. As an example, my examination of holism felt joyful; it consolidated a sense of knowing myself - like putting my finger on exactly the idea that could capture 'who I am'. At other times, I found myself struggling, lost in an unknown space, which Lee (2011) describes as the origin of a learning process. I can appreciate what this means as I recall the depth of reading, thinking, and reflection I found myself engaged with to progress my writing. My biggest challenge at this time was affirming for myself the cohesiveness and connectivity across the articles. My confidence was challenged as I contemplated, *'Who is my target population?'* and *'Does my project have any*

merit?'. This period reinforced for me the value of the supervisory role - having feedback and the opportunity to engage in dialogue. As I reflect on these experiences, I see the interconnectedness of 'knowing' and 'being'. I know that the struggles and challenges I faced were potential threats to my own student journey. I also know the resources my supervisors provided were essential to my goal-directed success and this has all influenced my becoming more open and invested in listening, questioning, and accepting the discomfort and importance of struggle.

As my writing progressed, I encountered uncertainty elicited by structural challenges related to the Results and Discussion chapters. I pushed the uncertainty aside, pressured by my own timeline to 'write the chapters', which in hindsight were forced and ill-equipped to deliver the coherence I had been aiming for. Reflecting on this episode, I can see again the interconnectedness of 'knowing' and 'being'. Through my knowing, I can identify how self-imposed time pressure negatively impacted my decision-making. I found myself trying to 'fit' a pre-defined structure that could not do justice to the findings that had emerged through the synthesis. After receiving less than stellar feedback from my supervisors, I reflected and accepted the authentic nature of this journey and the need to overcome self-imposed time pressures. Here I see how my 'being' was transformed. From this experience, I feel my confidence and identity as a researcher reached a new point; I began to listen more confidently to my own inner voice and take to heart what Smith (2015) defines as 'authorial control' in the retrospective writing process. I determined two chapters were needed: the first to capture the results and discussion related to the articles, and the second to address the overarching thesis questions. Through this sense of control, I felt my certainty and enthusiasm surge, and a strong sense of 'knowing where I was going' and 'how to get there' emerged.

Through this journey, I have come to know and value challenge and the importance of having access to inter- and intrapersonal resources to overcome those challenges. It is through that process that the learning Lee (2011) describes has taken shape. Further, I recognise the journey and challenges overcome have shaped dimensions of meaning in my life (Vos, 2020). Vos (2020) identifies a 'meaning quintet' – five dimensions of meaning that shape an individual's relationship with the world. Through my reflections, I can see my own transformation across three of these dimensions: self-oriented meaning, social meaning, and larger types of meaning. Self-oriented meaning represents my growing resilience, self-efficacy, and autonomy as a professional and researcher. Social meaning informs my

burgeoning sense of connectedness to the field through the contributions made; larger types
of meaning include the personal growth I have experienced, leading to my sense of 'being'.

Contributions and Implications

The thesis project makes an innovative contribution to higher education and beyond. It moves beyond a conception of the student experience as a descriptive and confirmatory measure of satisfaction to one that is revelatory. The body of work illuminates the complexity of the developing professional student experience and the central role of emotion as a nexus between person-environment interactions. Through this complexity, the importance of the evaluative-mediational aspect of emotion emerges, notably the appraisals of control, certainty, and coping. They inform feeling states that propel motivation and behaviour responses with consequences to wellbeing and learning. The thesis disentangles the multiple layers of inter- and intrapersonal factors interacting across varying contexts to influence the emotion process. In doing so, it becomes possible to identify resources to support individual and collective actions that promote positive wellbeing through attention to teaching and learning environments that are autonomy and competence supportive, provide essential social supports, and promote intrinsic motivation. I propose this research has wide application and relevance through its reconceptualization of the student experience and will be of interest to all those vested in wellbeing as a central factor in adult learning.

The thesis project builds on the pioneering work of Steuer et al. (2008) and others (Cai et al., 2020; GuildHE, 2018; Houghton & Anderson, 2017); it answers their call for attention to wellbeing as a defining factor of quality in higher education that favours individual and social transformation in line with sustainable development goals. Through this lens, the research embraces a definition of transformative learning that moves beyond specialist and technical content and introduces 'emotion awareness' as a central feature of transformation. This focus acknowledges the inter-subjective nature of teaching and learning and places value on the transformative potential of higher education to influence an individual's relationship in and with the world (Biesta, 2009; Hoggan et al., 2017).

Using this emotion-centric lens, I distinguish between emotion and feeling states and, in doing so, support overcoming what Scherer (2005) describes as the 'misnomer' of emotion as a 'feeling'; this is a long-standing tension that has created definitional issues within the social sciences. It progresses the discourse of student experience, moving beyond a 'feeling' of satisfaction, to one that disentangles its complexity, revealing multiple intersecting facets that are driven by an emotion process. This achievement is significant as

it solidifies a reconceptualization of student experience and provides a holistic avenue for exploration and understanding. It propels sector-wide discussions that currently cite emotion and mental health as core determinants of student success and attrition (AdvanceHE, 2021; Leman, 2021).

The thesis project introduces a new methodological approach for exploring student experience. It acknowledges student experience as a bespoke journey and illuminates the revelatory value of a synthesis approach for uncovering and better understanding inter and intrapersonal factors that are common across the population. An individual focus supports the exploration of the various components that define an experience, and the synthesis reveals patterns within the complexity from which it becomes possible to create a holistic understanding (Goldkuhl, 2012). This understanding has been applied to the development of the proposed integrated emotion-wellbeing framework, which offers a bank of resources arranged across four adaptive ecologies to support those engaged in the developing professional's learning to promote positive wellbeing.

The four-quadrant structure of the integrated framework addresses Houghton and Anderson's (2017) call for a holistic approach to building wellbeing capacities. It introduces opportunity for relational agency (Edwards, 2005) through its use as a tool by various partners vested in the wellbeing of students and promotes agentic orientations for the learner population through the varying resources that can promote students' sense of control, certainty, and coping.

Limitations

While the findings contribute to what Lazarus (1991) refers to as an interdisciplinary interest in the adaptational outcomes from emotion research and effectively bridge higher education, learning, development, and sustainability fields according to their mutual interest in positive wellbeing, there are limitations to consider. The body of research contained within the thesis relies on self-report and language analysis to determine the inter and intrapersonal experiences that inform the role of emotion. Data of this sort relies on individual capacities to accurately recall, identify, label, and report emotion experiences (Gross, 2014); this has limitations given the complexity of emotions; their rapidly changing and potentially compound states, and culturally informed meaning (Gross, 2014; Scherer, 2019; Stets & Trettevik, 2014).

The use of an emotion label to access the various components in the emotion process is limiting as it does not provide clear evidence of the precise function or weighted working

of each emotion component. This remains a central difficulty within emotion research (Moors et al., 2013), as does the contribution of mood and personality (Lazarus, 2001). These are limitations within the field of emotion research that have a cascading effect on what can be learned through an applied project. The applied perspective that informs this thesis and future work relies on continued progress within the field of emotion research. Emotion researchers (Feldman-Barrett et al., 2007; Lazarus, 1991) suggest the best measure of emotion is a discussion with the person experiencing the emotion. This idea is reinforced by Van Manen (2016) who suggests this is the most direct approach for accessing an individual's relationship with the world. Scherer (2019) suggests interdisciplinary research that bridges methodological and theoretical challenges is essential as a way forward in the study of emotion and would support new investigations into the interactions between emotion components.

The integrated emotion-wellbeing framework is an emerging model, whose utility is yet to be tested. There are potential limitations associated with its two-dimensional representation, which does not convey the potential interconnectedness across the quadrants. This is an aspect of the framework that, through future research, requires ongoing consideration.

Future Directions

The thesis project represents an applied theoretical and empirical amalgamation of work that has generated a foundation of understanding and a launching point for future research. Most immediately, I am engaged in a research project exploring the relationship between developing professionals' use of proactive coping strategies and their student experience. This is a multiple-case, quasi-experimental pre-test / post-test research design that engages self-report and retrospective interviews to explore the relationship between proactive coping, emotion, wellbeing, and student experience. Data collection was completed in 2022 and analysis is currently ongoing.

My future research ambitions are vested in making meaningful contributions to practice and policy discussions in the Education sector that centralise student wellbeing and bring attention to the complexity of student experience. Two clear lines of exploration guide this ambition; one dedicated to exploring the utility of the proposed integrated emotion-wellbeing framework, including its usefulness for prompting critical reflection on practice, and its efficacy for promoting agentic orientations that support positive wellbeing. My second interest is oriented towards the ongoing collection of student experience data using an emotion-centric lens. My ongoing interests are grounded in an awareness of the fluid nature

of experience; evolving emotion research; and the role of pragmatic phenomenology to centralise the student voice. From this, comes the potential for ongoing discovery and knowledge building, leading to actionable change that is both socially and individually situated according to responsive, adaptive ecologies and the development of tools to promote student agency.

Summary of Learning

I begin with a reminder of two important ideas shared in the introductory chapter, "*emotion matters in human experience"* and 'The Golden Thread',

> *'Emotion is a nexus between interpersonal and intrapersonal interactions,*
> *entangled with cognitive appraisals and bodily properties oriented towards*
> *wellbeing; it shapes human experience and learning.'*
>
> <div align="right">*(White & Ingram, 2023)*</div>

The preceding chapters have examined the utility of these ideas as a foundation for understanding the developing professional student experience. The examination began with my epistemological commitment to holism and my evolving research framework. These centralised around the theoretically informed understanding that human experience is discoverable through a pragmatic phenomenological exploration (Kaushik & Walsh, 2019). Through this orientation, I have adopted a plurality of methods to examine the complexity of student experience as it relates to various student-professional populations. Each of the methods begins with the individual context, acknowledging my awareness of the bespoke nature of experience and the individuality of meaning that shapes each person's relationship with the world (Van Manen, 2016; Vos, 2020). This has provided me the opportunity to scrutinise the role of emotion as a driver in the developing professional student experience, from which its close relationship with wellbeing has emerged. Using a back-and-forth examination of theory and findings, I have discovered emotion is a complex and dynamic process at work during person-environment interactions. It shapes a student journey that is bespoke to the individual according to a host of interacting sub-systems that become harnessed together during periods of stress and function in the interest of wellbeing.

The collection of work has provided a synthesis of evidence that has illuminated the role of emotion and its relationship with wellbeing in shaping the student experience. It has supported distilling and defining the anatomy of each emotion component and ecological factors that influence how they function. It has revealed patterns across the bespoke

experiences that are revelatory, including core appraisals of controllability, certainty, and coping that fuel the emotion process. These appraisals inform the relational meaning of an event as a benefit, challenge, or threat according to their evaluations of demands, constraints, or resources that arise across a network of proximal, distal, and whole-of-life contexts. Access to and use of a range of resources positively influences control, certainty, and coping; this informs a positive emotion-wellbeing relationship and student experience. Resources can be categorised in four distinct but overlapping ways, including: autonomy supportive environments, competence supportive environments, intrinsic motivation, and social supports. This sum of knowledge has led to a proposed integrated framework for action, that has relevance to teachers, learners, and any other partners interested in building a professional learning context underpinned by wellbeing.

Through the culmination of work and subsequent examination, I have unfolded a clear understanding that '*emotion matters'* in the developing professional student experience. As a complex and dynamic process, emotion engages multiple systems in gathering and responding to information during person-environment interactions; these responses drive an individual's relationship with the world, influencing their wellbeing, and informing learning.

For those interested in exploring and better understanding student experience as a complex phenomenon, emotion makes visible the web of interactions and processes at work during person environment interactions; how they shape an individual's responses to perceived challenges or threats; and the implications for wellbeing and learning. Through this understanding resides a proactive potential for system-wide action building institution-wide environments that promote wellbeing capacities and elicit agentic orientations designed to foster positive experiences.

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4 **Teacher Emotions Matter: Bridging Teacher Learning and Mathematics Instruction in**
5 **the early years Using an Affective Instruction Design**

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12
13 Abstract

14 Interest in the role of emotion within mathematics education has increased in recent decades. Within a
15 case-study framework, I explored how an Affective Instructional Design (AID) supported an early
16 year's teacher develop the capacity to change her instructional approaches, influenced her mathematic
17 affect, and the affective experiences of her students. My conceptualisation for AID is based on an
18 integrated framework approach drawing from emotion-learning theory, instructional design theory,
19 and teaching and learning mathematics theory to integrate affect and cognition throughout the
20 instructional process. Participants included 15 kindergarten children and their class teacher from a K-
21 12 school in Tennessee, USA. Measures included teacher interviews, video recordings of 13
22 mathematics lessons, and field notes. Findings from this small study suggest instructional supports
23 such as AID influence teacher capacity to bridge new learning and enacted practice; preliminary
24 findings indicate AID contributed to a rise in positive teacher and learner affect, and improved teacher
25 capacity to plan and implement quality mathematics learning environments.

26 **Keywords**
27 Mathematics; Teacher; Affect; Learning; Attitudes; Affective Instructional Design.

28
29 Introduction

30 Teacher emotions matter. This idea has garnered increasing attention in emotion-education research in
31 recent decades, contributing in part to what Pekrun and Schutz (2007) suggest is a fragmented
32 conceptualisation of emotions in education. In response, a number of researchers call for clarity
33 through focused study on the affect-cognition interface (Fiedler and Beier, 2014; Neville, 2013;
34 Pekrun *et al.* 2007). This interface acts during any experience and involves the bi-directional
35 interaction of emotions and cognitive processes, leading to enacted behaviours (engagement vs
36 avoidance) that influence learning and attitude formation (Pekrun *et al.* 2002, 2007). The affect-
37 cognition interface offers scope to better understand the relationship between teacher emotion, teacher
38 learning, and enacted instruction, which as Chen (2019) indicates is an area of research needing a
39 greater depth of investigation. It is through this lens that I embarked on the present research with the
40 aim of better understanding the relationship between teacher emotion, teacher learning, and enacted
41 instruction.

42 This paper presents the processes and findings related to my exploration of how an Affective
43 Instructional Design (AID) supports teacher emotion and learning, enabling new instructional
44 approaches for teaching mathematics in the early years. The paper begins by defining key terms in
45 emotion research and outlining the relevance of emotion research within mathematic education. This

is followed by a review of literature exploring the role of emotion in teaching and learning, and the processes undertaken to develop an affective instruction design (AID).

Key terms in Emotion Research

Affect and emotion are used synonymously in the literature. An individual's emotion, or affect, is influenced by their affective experience, a subjective evaluation of environmental and social stimuli, (pleasant/unpleasant) that trigger affective states (happy, frustrated, calm, nervous). Affective states vary in intensity, ranging from positive to negative, and can be recognised by bodily-physiological changes (increased heart rate, blushing cheeks), and expressive feelings (smiling, crying) (Linnenbrink, 2007). Habituated affective states become more stable, interacting with cognitive processes to influence attitude formation (Hannula *et al.* 2016). Attitudes are recognised as an individual's automated responses (expressed feelings/enacted behaviours) for liking or disliking (Zan *et al.* 2007). Within this study affect, emotions, and affective states (positive or negative) will be used interchangeably, and attitude will be used to capture an individual' affective state.

Emotion in Mathematics Education

Applied within Mathematics Education, the affect-cognition interface offers insight into factors that have given rise in Western societies to a culture of negative mathematical attitudes. Research suggests school learning experiences contribute to negative affect through traditional instruction, such as isolated working, memorisation, and rote rehearsal (Walls, 2007; Zan *et al.* 2007). As children progress through school, they express increasingly negative attitudes for mathematics (Grootenboer and Marshman, 2016) and upon leaving school these attitudes cycle into an existing culture of negativity toward the subject. For the individual who becomes a teacher, their role in this cycle has significant implications. The teacher provides the environmental and social stimuli to promote affective experiences for learners and the instructional choices the teacher makes are influenced by the teacher's own mathematic affect (Frenzel *et al*. 2009). Teachers with negative mathematic affect rely heavily on traditional instruction, perpetuating the negative cycle. It is the idea that the teacher's mathematic affect has implications within the wider cycle of negative affect that led me to explore how an Affective Instructional Design (AID) could support one early year's teacher overcome her own negative mathematic affect to adopt improved instructional approaches in her practice.

A Review of Literature

In order to disrupt the cycle of negative affect it is important to identify how and when it begins. Fielder and Beier (2014) indicate educational settings are a primary source of children's affective experiences. With this in mind, my literature review begins by exploring early years mathematics literature for a source of negative learner affect and the teacher's role in it.

Mathematics teaching in the early ears and the Cycle of Negative Affect

Early years literature suggests children have a natural affinity for mathematics, inquiring, reasoning, and problem-solving informally through play and in everyday experiences (Clements and Samara, 2014). This raises questions about when and how negative affect begins. As children move through pre-school, entering Kindergarten at age 5, their experiences with learning mathematics transitions from informal to formal engagement. Emphasis in teaching and learning turns to developing numeral knowledge (Purpura *et al.* 2013), requiring early years' teachers to adopt curriculum-based teaching to formally engage learners with mathematic concepts, methods, and language (Clements and Samara, 2014). At this point it becomes possible to identify a source of negative affect for both the teacher and the learner. Many early years teachers find the transition to systematic, formal mathematics teaching challenging and in juxtaposition to their early years' philosophy which places value on informal, play-based instruction (Ginsburg and Amit, 2008). When this happens, the teacher's pedagogical beliefs

1   are challenged, presenting the potential for a rise of negative affect through their instructional goal
2   appraisals (Schutz,

3   2014). Such feelings impact teacher motivation and capacity to engage students in meaningful
4   curricular experiences (Campbell, 2012), which is significant based on Frenzel *et al.* (2009) who
5   suggest a direct correlation between teacher and student emotions. The teacher who feels de-
6   motivated about the instructional approaches, may pass this feeling of negativity on to students.
7   Additionally, some early years teachers feel they lack the knowledge and understanding needed to
8   bridge informal and formal mathematics (Ginsburg and Amit, 2008). In these situations, they adopt
9   instructional approaches characteristic of traditional elementary grades including rote rehearsal and
10   isolated working (Clements and Samara, 2014). For young learners this signals a potential source of
11   negative affect as the play-based environments that give rise to positive affect such as curiosity or joy
12   (Elkind, 2008) are replaced by mechanical and procedural practices void of play or natural
13   mathematical curiosity. Stigler and Hiebert (2009) suggest current approaches to professional learning
14   that might address this issue are ineffective and a gap exists between teacher learning and enacted
15   practice. They call for in-class support systems to address this issue. From this perspective, teacher
16   affect in the early years necessitates exploration for the sake of supporting teachers to bridge
17   professional learning and enacted practice. In this study, I introduce an Affective Instructional Design
18   (AID), underpinned by the affect-cognition interface and the control-value theory of emotion (Op't
19   Enyde *et al.* 2006; Pekrun 2007). AID addresses teacher affect as a way of bridging the gap between
20   teacher learning and enacted practice. These ideas are explored in more depth in the next section,
21   which provides a review a literature that informs the conceptualisation.
22
23   Emotion and Learning

24   Whilst research on emotion enjoys a rich history, emotion-education research investigating the role of
25   the affect-cognition interface according to student and teacher experiences has received less attention.
26   Becker *et al.* (2014) address this issue through crossover theory, suggesting emotions can be elicited
27   through interactions with others. They found teacher emotions and instructional behaviours are
28   significant situational factors that influence student emotions and propose emotion contagion, an
29   unconscious automatic response that occurs in human interactions, connecting teacher and student
30   emotion. Burgess *et al.* (2018) echoes the teacher-learner relationship through their focus on social
31   contagion, suggesting social connectedness leads to "the involuntary 'catching' of behaviours and
32   attitudes" (p. 1) that inform learner interest and engagement in both the short and long term. Other
33   researchers have investigated the affect-cognition interface through cognitive appraisal theory.
34   Frenzel *et al.* (2009) suggest cognitive appraisals influence teacher-learner emotions. The authors
35   posit that during instruction teacher-learner appraisals interact bi-directionally, influencing affective
36   experiences and informing instructional choices. Pekrun *et al.* (2007) identify cognitive appraisals as a
37   mediating force between academic emotions and environmental factors including quality of
38   instruction, learner engagement, classroom cohesion, and self-belief. They present the control-value
39   theory of achievement emotions, proposing that when an individual feels in control of achieving an
40   outcome and values the learning, they are likely to make positive appraisals leading to positive
41   academic emotions. The authors extrapolate their theory to the classroom teacher, suggesting that
42   when a teacher feels a sense of control and value for the planned and enacted instruction, there is
43   potential to trigger positive affect. Building on the control-value theory, Buff *et al.* (2011) examine
44   ways of activating positive affect during instruction. They identify four instructional features:
45   outcome focus; activity focus; social influence; and metaemotions, as having potential to promote a
46   high sense of control and subjective value for the teacher and the learner. These features of instruction
47   guided the next part of my literature review, exploring mathematics instruction in the early years,
48   leading to an overview of AID.
49
50   Mathematics Instruction in the early years and Teacher-Learner Affect

A number of researchers recognise the role of emotion in teaching and learning mathematics. Hargreaves (2005) suggests planning is an emotionally rich activity that supports teachers establish a meaningful connection to the instructional process. Such connection is most effective when planning is clearly presented and outcome focused, defined by an overarching goal, essential content knowledge, key vocabulary, conceptual understanding, and component activities that guide the lesson (Hattie, 2012; Peña-López, 2009). Through planning arises the opportunity to establish a high sense of control and subjective value for the instruction, supporting positive teacher affect.

Dunphy *et al*. (2014) emphasis the teacher's strategic choice of instructional approaches as essential to engaging children cognitively and emotionally with learning to support their developing mathematical proficiency in the early years. Explicit Instruction (EI) is one such instructional approach (Clements and Samara, 2011). EI is characterised by quality teacher-child interactions and purposeful use of concrete experiences, symbols, language, and pictures that when strategically organised, create a learning trajectory to cognitively and emotionally support children transition from informal to formal mathematics. A significant factor influencing the progression along the trajectory is the teacher role, which becomes multi-faceted. The teacher actively engages learners as a provider, demonstrator, learner, observer, coach, and mediator (Edwards and Malicky, 1996) using discussion, questioning, feedback, and modelling to support children gaining ownership over their learning (Solomon and Black, 2008). Ownership is indicative of high control-value, suggesting EI approaches will support a rise in positive affect.

Through EI approaches, play and problem-based activities can be used strategically to support affective and cognitive engagement with mathematics in the early years (Dunphy *et al*. 2014). Through play children informally explore mathematical ideas, develop a sense of curiosity, and connect prior learning with new thinking (Burton, 2010). Problem solving supports creative, formal mathematical thinking, leading to mathematic proficiency and high task value (Burton, 2010). Problem-solving can also be a source of heightened affect which can be debilitating to learning because of a decrease in capacity for cognitive investment (Zan *et al.* 2007). To regulate heightened affect, the role of teacher as mediator is significant, providing the teacher the opportunity to teach children reappraisal skills and to support them thinking more positively about negative affect (Attard, 2014). What once was appraised as a threat leading to avoidance is reappraised as a challenge, triggering engagement behaviours (Jamieson *et al.* 2018). Significant in this process is the teacher's use of reflection. Through reflection the teacher can assess children's cognitive and emotional experiences, which Strack *et al.* (2017) highlight as essential for supporting reappraisal processes. Björklund (2012) suggests reflection allows young children to appraise what they know, what they need to learn next, and how to bridge the gap. For a teacher, critical reflection supports self-examination, exploring the relationships between past and present experiences making possible new thinking, leading to new practice (Bolton and Denderfeld, 2018). Collectively these ideas suggest the strategic use of play and problem-based activities, paired with reflective practices may support an improved sense of control and value for the teacher and learners' emotional experiences during the instructional process.

An Overview of the Affective Instructional Design (AID)

Effective instruction begins by establishing clear learning objectives that are followed by systematically structured instructional events that include all aspects of instruction and actions by teacher and learners that have a direct effect on the learning (Gagne et al. 2005; Rosenshine, 2012). Informed by the review of literature, AID's 3-phase planning framework has been designed to support positive teacher-learner affect through attention to outcome focus, instructional events, and meta-emotions. Each phase is defined in the following way, with three assumptions informing how AID will support positive teacher affect:

- The Pre-Planning Phase adopts an outcome focus, requiring the teacher to identify the overarching goal, essential content knowledge, conceptual understanding, and key vocabulary for the lesson. The assumption is, this planning will support the teacher gain directional control and subjective value for the instruction, leading to positive affect.
- The Instructional Planning Phase has a structured planning trajectory involving four segments, each drawing from EI approaches. Segment 1 adopts an outcome focus using teacher-led instructional strategies to orient learners to the learning objective and to support stimulating learner curiosity. Segments 2 and 3 adopt an activity focus that supports a transition from informal play-based activities to formal problem-based activities. These segments are characterised by small group interactions, supporting high task focus and quality peer-teacher interaction. Segment 4 is defined by collaborative reflection to support developing appraisal and reappraisal skills. Underpinning each segment is a focus on multi-faceted teacher roles to support learner affect and cognition. The assumption is the planned instructional events and purposeful use of teacher role will promote positive learner affect, which will trigger a rise in positive teacher affect.

- The Post-Instruction Appraisal Phase is completed after the lesson, requiring the teacher to critically reflect on a series of questions exploring emotions, thoughts, and actions during instruction. The assumption is the systematic use of reflection will make possible new thinking and feeling, leading to a high sense of control and value for the instructional process and a rise in positive affect.

This study explored how AID supported an early year's teacher overcome her own negative mathematic affect to adopt improved instructional approaches in her practice. The research was guided by the following questions:

- How does AID affect teacher capacity to adopt new instructional practices?
- How does AID affect children's attitudes during mathematics learning?
- How does AID affect the teacher's affect experiences teaching mathematics?

Method

A mixed-methods, exploratory sequential design was used, allowing for an in-depth examination of AID's influence on teacher capacity to adopt new instructional practices, her affect experiences, and the affect experiences of her learners. Through merging qualitative and quantitative data, a comprehensive analysis of the research question was possible, enhancing the integrity of the findings (Creswell, 2014). Data sources included 13 mathematics lesson video-observations capturing evidence of attitude, semistructured teacher interviews, and field notes. Video-observation data underwent descriptive analyse using SPSS and qualitative data was analysed thematically, applying Braun and Clarks's six-step approach examining and extracting common themes within the data (Braun and Clarke, 2006).

The participants included a veteran kindergarten teacher and her fifteen students, ages 5 and 6 (mean = 5 years, 8 months), enrolled in a kindergarten program of a university K-12 school in East Tennessee. Ethical approval was obtained from the East Tennessee State University Institutional Review Board. An information session was held for the early years department at the local school where the kindergarten teacher volunteered her participation in the study. Participation in the study was based on administrative, teacher, parental, and child informed consent, and the identity of participants was kept confidential using pseudonyms.

Instruments and Data Collection

1   Three phases of data collection occurred with teacher training on the use of the AID intervention
2   taking place between the first and second phase.

3   *Phase 1*: Pre-intervention data included a semi-structured teacher interview, field notes, and three 1-
4   hour video recorded mathematics lesson observations capturing evidence of learner attitude. This data
5   was analysed to establish a baseline of evidence for understanding existing teacher instructional
6   approaches and teacher-learner affect for mathematics. Following this phase, and in the week prior to
7   the second phase of data collection, the teacher participated in a series of four one-hour professional
8   development sessions specifically designed to support her learning to use AID for planning
9   kindergarten mathematics. Table 1 provides an overview of each session.
10   **Table 1.** Overview of Teacher Training on the Use of AID.

Teacher Training Sessions	
1	Introduce the *AID* Planning Framework • Phase 1 of AID: Introduce 'Outcome focus'. • Define content knowledge, conceptual understanding, key vocabulary – link to CC Kindergarten Standards • Stimulating curiosity through instruction
2	Introduce Phase 2 of AID • Define the teaching and learning trajectory. • Identify principles of explicit instruction applied to outcome focus; activity focus ; Effective use of learning intentions and success criteria ;Play using props, puzzles, stories, and role ;Effective use of technology
3	Explore Phase 2 of AID • Identify principles of explicit instruction applied to social influence; and meta-emotions • Develop strategies to promote positive affect states in early years (Kindergarten) mathematics ; Teacher talk: feedback, questioning, promoting growth mind-set ; Small group organisation ; Problem-based approaches ; Recognising and responding to heightened affect
4	Exploring Phase 3 • Understanding and applying reflective questions to promote personal professional development • Practice Plan: use AID to plan a mock lesson

11
12   *Phase 2:* Intervention phase data was collected during a two-week period, capturing ten 1 hour video
13   observations of structured math lessons using AID, and included field notes which provided
14   contextual information to support video data analysis. Video and interview data were transcribed, and
15   notes were added to capture inflections, tone of voice, volume of speaker, facial expressions (Cohen *et*
16   *al.* 2018). A Mathematics Attitude Checklist (MAC) and time-sampling were used to code video data
17   for markers of attitude during each lesson segment. Attitude was determined to be an accurate
18   measure of affect based on Zan *et al.* (2007) who define it as the expressed feelings and enacted
19   behaviours reflecting an individual's affective state and Hannula et al. (2016) who define attitude as
20   "an interpretive instrument to understand the reasons for intentional actions" involving complex
21   affective and cognitive interactions (p. 10). Markers of attitude adopted in MAC were drawn from
22   Chapman (2003) who defined them in terms of engagement, resourcefulness, and resiliency. Learner
23   engagement includes any on-task behaviour including: active listening, use of mathematical language,
24   and purposeful participation (Wells and Claxton, 2008). Resourcefulness is recognised as personal

1 and social goal-oriented actions including seeking support, accessing resources, and acting on ideas
2 from others (Zauszniewski *et al*. 2010). Resiliency is a construct that allows learners to overcome
3 negative affective states and is evidenced by task-persistence, willingness to try new strategies,
4 working through heightened affect, and responding positively to peer or adult suggestions (Lee and
5 Johnston-Wilder, 2017). The MAC instrument was used to capture evidence of five markers of
6 learner attitude: active listening; attentiveness to the task; task persistence; purposeful social
7 interaction; positive responses to peer or adult suggestion.

9 *Phase 3:* Post-intervention data collection followed one week after the intervention and included a
10 semi structured teacher interview allowing for a comparison of pre and post changes to attitude.

12 Addressing Design Threats

13 Within the design purposeful steps were taken to minimise construct threats and to support validity. A
14 secondary coder, independent of the research project was recruited to address measurement bias
15 inherent to MAC. The MAC checklist was piloted and satisfied an internal consistency test
16 (Cronbach's $\alpha=0.875$). To ensure continued trustworthiness of data collection, recognising the
17 potential for researcher sensitisation, the secondary coder rated a random blind selection of 30% of the
18 baseline video data and 30% of the intervention video data. The results of the inter-rater analysis were
19 0.906.
20 Findings and Discussion

21 Analysis of video, transcript, interview, and field note data across the three phases of data collection
22 provide evidence of how AID influenced changes to instruction and teacher-learner affect.

24 Pre-Intervention Data

25 Negative teacher affect

26 From theme 1, which explored the teacher's mathematic affect prior to the intervention, a negative
27 sense of control related to both subject mastery and subjective value for the instructional practices
28 emerged indicating the teacher had negative mathematic affect. Aligning with Ginsburg *et al.* (2008)
29 the teacher expressed a lack of understanding for how to teach mathematics in a meaningful way that
30 would ensure children could pass their assessments. She felt worksheets were the only strategy to
31 '*make sure they can pass the tests*'. When asked how she felt teaching mathematics, the teacher
32 expressed feeling '*anxious*' and that teaching math was '*not fun*'. Combined, the teacher's focus on
33 achievement goals and her instructional anxiety negatively influenced her sense of agency, leading to
34 reliance on instructional approaches for which she held low subjective value. The teacher's low
35 subjective value was further evidenced as she described her perception of the children's learning
36 experience, '*the concepts are too difficult*' and '*they don't mean anything to the children*'. These
37 findings align with previous research (Hiebert and Grouws, 2007; Schutz 2014) suggesting when
38 conflict exists between a teacher's philosophical beliefs and enacted practice there is potential for a
39 rise in negative affect. These feelings led the teacher to adopt what Stipek *et al.* (2001) describe as
40 characteristics of traditional American elementary math classes: a procedure is introduced, children
41 rehearse step-by-step instructions, and then engage in independent practice. Findings from the video
42 data provide corroboration indicating the teacher followed a similar three-part structure beginning the
43 lesson with the teacher introducing and modelling the task, followed by children rehearsing
44 procedural steps, and finishing with independent task completion.

46 Intervention Data

47 A rise in positive affect experiences

Video data, capturing indicators of attitude were collected for the 10 intervention mathematics lessons and analysed at the group level (N=1). Figure 1 summarises the findings, suggesting throughout the intervention, participants demonstrated a rise in positive affect experiences.
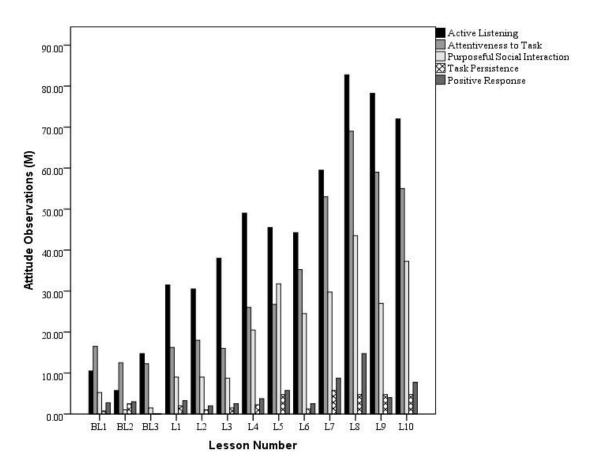
Figure 1. Observations of Five Measures of Attitude across 13 Math Lessons. *Note.* BL=baseline lesson during which no intervention was occurring; L= a lesson using the AID intervention.

The change in markers of attitude during the intervention, in particular active listening, attentiveness to task, and purposeful social interactions, could be attributed to the new instructional approaches adopted using AID. Where pre-intervention lessons involved a large segment of isolated and independent working, AID lessons were defined by social interaction characterised by small group-high task focus facilitated using multifaceted teacher roles. Early Year's experts acknowledge small group organisation and high-task focus supports making learning more visible, allowing the teacher to discuss and question mathematical understanding to gauge development along the learning trajectory (Clements and Samara, 2011; Dunphy *et al.* 2014).

Further video-transcript and field note analysis (Braun and Clarke, 2006) provide clarity about the impact of AID on instruction and teacher-learner affect.

Changes in teacher talk

The second theme revealed improvements to the teacher's use of teacher talk. The teacher increased her use of mathematic vocabulary, questioning, and celebratory expressions acknowledging effort and achievement. During intervention lessons the teacher could be heard using key phrases, '*That's wonderful. Tell me how you found that out.*' or '*How could we decide what comes next?*' Researchers indicate teacher talk is essential to children's emotional and cognitive development. Doabler *et al.* (2013) acknowledges the importance of teacher talk for modelling mathematics to support at-risk

early year's learners, while Mercer and Hodgkinson (2008) define exploratory talk as a way of connecting language and thought, leading to deeper understanding.

Social Influence

A third theme highlighted social influence as a factor leading to meaningful engagement with mathematic concepts. Burgess *et al.* (2018) define social influence in terms of social contagion, a process through which one individual influences the attitudes and engagement of another. Video-data analysis evidenced how improved teacher-child mathematical interactions sparked children's eagerness to spontaneously share mathematical experiences. Prior to the start of one lesson a child excitedly sought the teacher's attention, smiling and tugging at her arm. When she turned to him, he engaged in the following revelation:

> Miss…Miss… I want to tell you something. Laassst niiight my sister…[pausing, creating anticipation, the bold font highlights the child's emphasis on key words]… **SAT BESIDE ME** for dinner! That's one of our words!! [Big smile] And… and… I put my dinner **INSIDE** me… and that's one of our words, too! (teacher and child laughing).

That excitement encouraged two nearby children to spontaneously join in. The first child exclaimed and demonstrated, *'Oh, oh, and I put my food **IN** my mouth, too!'* and the second child shared, *'I put my hands **ON** my head'*. All participants enjoyed smiles and laughter during the exchange, demonstrating positive affect states as they engaged with mathematical sharing. Although these events could be characteristic of children in any class at this age, when compared to the baseline analysis which indicated mathematical discussion and purposeful social interactions were limited, this change in tone, emotional expression and excitement about meaningful real-life mathematics was striking and unique to the setting. It made learning visible, revealing the meaningful connections children were making between real world experiences and mathematics learning. Clements and Samara (2014) suggest this sort of social exchange, allowing children to discover connections between mathematical concepts and their real world are essential to developing positive mathematical dispositions.

Play and Problem-based instruction support positive affect experiences

During lessons the teacher used play and problem-based scenarios to explore number concepts. A fourth theme indicates these instructional approaches contributed to positive affect experiences and developing mathematical thinking. In one lesson the children entered the classroom to discover their class calendar had been mysteriously knocked over, leaving materials scattered on the floor. The scenario stimulated children's curiosity and interest in the topic, supporting their engagement in problem-solving. This outcome echoes findings from Elkind (2008) who identified play as important to supporting children engage with deep thinking. Through play, the teacher adopted open questioning to promote formal engagement with mathematic concepts and language; *"What do you see? How will we put the calendar back together? What information do we need on our calendar?"* This approach supported children adopt formal mathematic language:

> Child 7: '25 has to go after' [pointing to 22, 23, 24]

> Child 2: 'Sunday is first'

According to Hiebert and Grouws (2007) play and problem-solving lead to meaningful learning opportunities that support children overcome confusion to establish strong mathematical connections and positive learner attitudes.

Post-Intervention Data

Positive teacher affect through positive appraisals

Findings from the post-interview teacher survey suggest a fifth theme revealing teacher appraisals positively influenced teacher affect. Echoing previous research (Frenzel *et al.* 2009; Pekrun *et al.* 2007) the teacher made positive goal appraisals related to learner behaviours, classroom cohesion, and quality of instruction resulting in the teacher's improved self-belief. When asked to describe changes in learner behaviours and classroom cohesion the teacher highlighted emotive changes *'the classroom environment has become electric'* and the children have become *'eager to discuss mathematics'*. They are '*excited by the connections they make*' between mathematics and their own daily experiences and *'they display an increased interest and ability to share and help each other with activities'*. The teacher appraised aspects of quality of instruction positively explaining, '*we cover so much more content*' and '*I can see how my consistent use of the vocabulary in the lessons really made a difference in the kid's use of vocabulary*.' Adding to this, the teacher expressed feeling 'exhilarated' through the process and that AID supported her to *'understand lesson design'* and to '*really see who "gets it" and who is still struggling'*. The teacher's positive appraisals about content coverage, capacity to gauge learning, and lesson design, indicate improved feelings of control and value for the instructional process, signalling a positive change in her mathematic affect.

Limitations

While initial findings exploring the use of AID are promising, generalisation is inappropriate due to the small scale of the study. It may be the novelty of the instructional changes influenced affective experiences without any lasting impact on individual affect. A key limitation in this study was the absence of a longer term follow-up exploring any lasting impact of AID on teacher practice. A long-term study, including randomised-control, multiple teacher, and multiple class trials involving more complex analysis and improved design would account for habituation, and provide opportunity to examine the processes that influence teacher change leading to a better understanding of how AID supported the teacher and any lasting impact on teacher practice. A more robust cycle of research is required before the findings are considered more than preliminary.

Conclusion

A teacher's affect orientation plays a significant part in the cycle of mathematic affect. It influences the teacher's capacity to bridge new learning with enacted practice, which in turn informs the environmental and social stimuli that directly influence children's affect (Frenzel *et al.* 2009). In this study, I explored how AID supported one teacher overcome her own negative affect to adopt new instructional approaches in her practice.

Informed by Buff *et al.* (2011), AID's three phase planning framework provided the teacher a clear instructional trajectory attending to outcome focus, activity focus, social interactions, and metaemotions. Based on emotion research, the assumption was made that AID would support the teacher to develop feelings of control and subjective value giving rise to positive affect (Pekrun *et al.* 2002, 2007, 2014). Findings confirm AID was a catalyst for positive affect, supporting the teacher to bridge professional learning and enacted practice through positive appraisals that led to her increased sense of control and subject-value for the instructional process. Using AID, the teacher was able to adopt new instructional approaches that led to increased positive affect experiences for learners. Findings suggest AID positively influenced the teacher's affective states during planning, delivery, and following instruction, leading to an increase in positive affect for teaching mathematics. This study provides further clarity on the close relationship between teacher-learner appraisals, emotion, and instruction (Frenzel *et al.* 2009) and the bi-directional relationship between affective experiences, learning, and affect (Op't Eynde *et al.* 2006; Fiedler and Beier 2014). The teacher's positive goal appraisals influenced her capacity to enact new instructional approaches. New instructional approaches provided positive affective experiences for learners, leading to positive teacher appraisals, and triggering a cycle of positive affect and engagement with learning. This finding offers valuable insight into the potential AID presents for disrupting the cycle of negative affect for mathematics.

AID addresses previous research (Stigler and Hiebert, 2009) calling for an in-class system of support to aide teachers' bridge new learning with enacted practice. Most interesting in my study was the impact of teacher presence on the social learning climate. Multi-faceted teacher roles supported children's enthusiasm engaging in mathematic discussions. Increased opportunities to discuss mathematics initiated a contagion effect (Becker *et al.* 2014; Burgess *et al.* 2018) triggering excitement, interest, and spontaneous sharing using mathematical language to make real-world connections. Contagion is a relatively under-researched topic in education (Becker *et al.* 2014), and my findings raise questions about the role of contagion as it relates to early years education, warranting a need for further investigation.

Practical Implications

These findings have implications within professional development discourse where teacher effectiveness and student achievement are identified as correlating with career-long professional learning (The Professional Learning Association, 2017). Echoing the ideas of Stigler and Hiebert (2009), it is insufficient to presume teacher professional development will translate into improved practice. Marrying together this idea with findings from my study highlights a need for future professional learning to be presented through the affect-cognition interface, taking into account influences of emotion on teacher capacity to enact new learning and the necessity of support mechanisms to facilitate bridging learning and practice.

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3   **Student Emotions Matter: Understanding and Responding to Taught Postgraduate**
4   **Student Experience Through the Lens of Well-being**

5   Wendee White and Richard Ingram, University of Dundee

6

7   ABSTRACT

8   Increasingly, the taught postgraduate student experience is being recognised as a complex journey
9   influenced by a multiplicity of interconnected factors that are institution-related, discipline specific,
10   and socio-culturally informed. This emergent recognition of the complexity of being a taught
11   postgraduate (PGT) student underpinned the research study reported in this paper. Well-being was
12   conceptualised as central to the student experience and interconnected with five facets of the student
13   journey. It was explored through the lens of emotion and as an independent variable. Guided by
14   principles of pragmatism, the study followed an action research approach seeking the perceptions of
15   PGT students engaged in academic study and in turn reports the findings relating to their student
16   experience. This paper reports on findings from year 1 (2017-18 academic year) of a 3-year cross-
17   sectional study. Data were collected in 2 phases using an online survey followed by focus group
18   interviews and then underwent thematic analysis. Our findings reinforce and further inform the
19   understanding that the PGT student experience is uniquely complex. Through our exploration we
20   have come to understand PGT student experience as an emotionally rich process influenced by three
21   dimensions of the student journey, degree of connectedness; effectiveness of supports; and quality of
22   communication, that elicit threat or challenge appraisals based on perceived demands and coping
23   resources, triggering emotion responses that impact well-being, and learner engagement.

24   **Keywords:** taught postgraduate student experience, well-being, emotion, action research

25

1 Introduction

2 Evaluation of student experience has become a significant data source in UK Higher Education (HE),
3 informing innovation, accountability, retention, and attainment across the sector (Universities UK,
4 2016). However, Steuer, Marks and Murphy (2008) argue the conceptualisation of student experience
5 is insufficient, narrowly defined by quality measures focused on economic interests associated with
6 retention and attainment. They call for a sector-wide reprioritisation of quality measures designed to
7 enhance both individual and collective well-being, suggesting the transformative potential of HE
8 resides in an approach that acknowledges the interconnectedness of the learner with society,
9 economy, and environment. Their notion of student experience as interconnected is echoed in recent
10 literature that defines the taught postgraduate (PGT) student experience as a complex journey defined
11 by psychological and sociological processes influenced by a multiplicity of interconnected factors
12 that are discipline-specific, institution-related, and socio-culturally informed (Muijs & Bokhove,
13 2017; Quality Assurance Agency for HE in Scotland (QAA), 2018; Steuer, Marks & Murphy, 2008;
14 Temple Callender, Grove, & Kersh, 2014; Tobbell & O'Donnell, 2013).

15

16 This emergent recognition of the complexity of being a PGT student underpins the research study
17 reported in this paper. The following model (Figure 1) represents our conceptualisation, positioning
18 well-being as central to the student experience and interconnected with five literature-informed facets
19 related to subject-discipline, institution, and wider socio-cultural factors. The project followed an
20 action research approach, underpinned by a commitment to seeking a shared understanding of the
21 perspectives of students and in turn feeding these into institutional and programme level
22 developments (Hardwick & Worsley, 2011).

23 This paper presents the methodological approach to seeking the perceptions of students engaged in
24 academic study and in turn reports the findings relating to their student experience.

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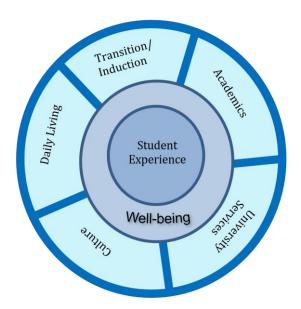
28
29
30 **Figure 1** Conceptualising student experience as a multi-faceted student journey underpinned by well-
31   being.
32 Defining student experience
33 Building on a review of literature that presents student experience as a multi-faceted journey
34 underpinned by psychological and sociological processes ((Muijs & Bokhove, 2017; Quality
35 Assurance Agency for HE in Scotland (QAA), 2018; Steuer et al., 2008; Temple Callender, Grove, &

Kersh, 2014; Tobbell & O'Donnell, 2013) we identify five dominant and distinct facets related to subject discipline, institution, and wider-socio-cultural factors that interconnect with well-being to define the student experience. The follow sub-sections provide a review of literature informing each facet of our conceptualisation.

Student experience underpinned by well-being

Well-being is a multi-faceted concept consisting of hedonic and eudaimonic measures that indicate an individual's mental health, with implications for flourishing or languishing in life (Keyes, 2005). Hedonic measures reflect an individual's personal perceptions of happiness and life satisfaction, while eudaimonic measures gauge personal perceptions of psychological functioning in life (Deci & Ryan, 2008). The World Health Organisation (WHO) encapsulates the importance of well-being to human functioning through its definition of mental health:

> Mental health is defined as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to his or her community" (WHO, 2014a).

In defining well-being, it is important to acknowledge its close relationship with emotion and how the interactions of emotion and well-being influence capacity for learning. According to Lazarus and Smith (1990), well-being and capacity for learning are influenced by an individual's situational appraisals of threat or challenge. Through this lens, Jamieson, Hangen, Lee and Yeager (2018) discuss the biopsychosocial model of challenge and threat (BPS), positing a direct relationship between challenge-threat appraisals, coping resources, stress demands, emotion responses, and enacted behaviours. The authors suggest challenge-threat appraisals elicit emotional, physiological, and psychological responses that impact motivation for learning. This has significant implications for the PGT population whom research suggests enter study with significant challenges and stresses (Coneyworth et al., 2019; McPherson, Punch & Graham, 2017).

Steuer et al. (2008) argue a central focus of higher education must be on personal and collective well-being to support 'flourishing'; a state of optimal well-being that is directly related to learning, creative thinking, life satisfaction, and social responsibility. Drawing from positive psychology (Ryff & Singer, 1998; Seligman, 2012), they identify self-acceptance, positive emotion, engagement, personal growth, relatedness, autonomy, relationships, environmental mastery, and purpose in life as elements that support flourishing. Through this approach the authors posit an increase in learners' sense of altruism, satisfaction, meaningfulness, accomplishment, and feelings of competency, supporting a transformation that enhances learner well-being and "underpins their potential for enhancing the broader well-being of the economy, environment, and society" (p.29). Houghton and Anderson (2017) call for focused discussion of well-being as it relates to teaching and learning, arguing it predominantly resides outside of the 'mainstream', relegated to the responsibility of university and student support services. Within this study, well-being was conceptualised as central to the student experience (Figure 1) interconnected with five facets of the student journey. It was explored through the lens of emotion, and as an independent measure.

Transition and student experience

Gale and Parker (2014) emphasise transition is not simply a 'point in time' but is an interconnected process involving multiple hierarchical systems including individual, family, professionals, HE institutions, and national/international policies all acting to influence a student's educational trajectory (Jindal-Snape & Rientes, 2016). O'Neill, Tobbell, O'Donnell and Lawthom (2007) indicate psychological and sociological processes impact transition and contribute to a student's overall experience. They suggest PGT student transitions should be supported by a university community approach that supports building a sense of belonging, which is achieved when academic, administrative, and support staff promote PGT students' academic identity and positive peer

interactions. May (2011) describes belonging as "crucial to being a person" and involving an emotional element defined by a sense of "feeling at home" (p. 369). In our study we investigate transition as an ongoing process throughout the student journey and a contributing factor to the student experience.

Academics and university services: student experience of learning

Quality teaching is a multi-dimensional concept involving learning environments, curriculum design, course content, learning contexts, use of feedback, assessment, tutor-student relationships, and student support services; it relies on factors beyond the programme level and must include supports from wider university services (Henard & Roseveare 2012; QAA, 2018). This idea is echoed in The Teaching Excellence Framework (TEF, 2017), a UK government initiative introduced into HE that measures an institution's "teaching mission" (Gunn, 2018, p.135). The teaching mission is defined by a multi-dimensional view of the learning experience reflecting a four-part student lifecycle that includes input processes (pre-enrolment and entry experiences); in-study processes (teaching quality and learning environments); output processes (retention rates, and attainment), as well as outcomes (graduation destinations, personal development). Gunn (2018) suggests the multidimensional approach provides information to support both quality assurance interests and consumer market information. However, a number of authors suggest teaching and learning for the PGT population has been overlooked (Heussi, 2012; Morgan & Direito, 2016; Tobbell & O'Donnell, 2013). Within our study, we used a multidimensional lens to explore PGT student perceptions of academic and university services to better understand how they contribute to student learning experiences. These are categorised from two aspects:

- Teaching quality: tutor support; learning contexts, learning materials, use of feedback, assessment approaches, module design.
- Wider learning environments: support from university services including administration, library, IT, health, counselling, housing.

Culture, daily life, and student experience

Founded on shared beliefs and values, culture is a source for understanding ourselves and the world within which we live (Macionis & Plummer, 2012). There is a close relationship between culture and identity, leading to a sense of being, and motivation for acting within any social entity (Bin Ai, 2017). Within the context of HE, Maassen (1996) introduces academic culture, a two-pronged term involving the organisational and the discipline specific institutional culture that exists in HE. Academic culture defines what is valued in the learning and social environment of a university and it is up to each individual member to adapt to it during their studies. Students who succeed are those who most quickly inculcate to the culture (Gale & Parker, 2014), a process that varies for students based on multi-dimensional factors that include the social and organisational cultures of the institution, and daily life issues including family and work commitments (Jindal-Snape & Rienties, 2016 p. 22). For students arriving at university from increasingly diverse ethno-cultural backgrounds there is the risk of culture shock (Ward, Bochner, & Furnham, 2005), leading to a reduced ability to adapt, and having their progress and experience affected accordingly.

Greater focus on experiences of international students has informed a new discourse on how the university community should support PGT students to adapt, recognising they enter study with a diverse range of knowledge and experiences, learning styles, and cultural norms (Coneyworth, Jessop, Maden, & White, 2019). In our study, we explored culture from two aspects, students' experience of academic culture and their experiences of their social context, acknowledging daily life challenges that each of these aspects present to the student journey.

1 The aim of our study was to better understand and respond to student experience through an
2 exploration of the interactions of well-being, and five facets of the student journey, which were
3 defined in the following ways:

- • Transition/Induction: student experience with admissions, initiation and orientation to their
  programme, transition into study;
- • Academics: including quality of teaching, assessment practices, learning environments,
  resources, tutor-student interactions, feedback;
- • University Services: interactions with various services including health, counselling, library, IT,
  student, and accommodations, all seen as having a role in the student journey;
- • Culture: acknowledging both academic culture and local culture play a role in the student
  journey;
- • Daily Living: includes aspects of daily life not connected directly with study but playing a
  contributory role in the student journey.

14 Two questions guided the research:

1. What are taught postgraduate student perceptions of their experiences in HE?
2. What is the relationship between well-being and student experience?

Methodology

Context

19 The study took place within a Scottish University. Our goal was to involve all PGT students
20 participating in online, oncampus, or blended learning programmes within a faculty that delivers
21 programmes relating to teacher education, social work, and community education.

Study design

23 This paper reports on findings from year 1 (2017-18 academic year) of a 3-year, cross-sectional study
24 exploring student experience using an action research approach defined by data collection, knowledge
25 gathering and dissemination, and productive reflection (Boud, 2010). It is guided by principles of
26 pragmatism, underpinned by abduction (Feilzer, 2010). Through this design we acknowledge action
27 research is a process that should be conducted over time allowing for findings to be compared from
28 year to year and from group to group (Callison, 2007). The following section outlines approaches to
29 data collection and analysis adopted with in the study.

Recruitment, data collection and analysis

31 Participants were recruited using web-based advertisements broadcast through the internal
32 communications system, and through announcements posted within programme specific virtual
33 learning spaces. In line with Cohen, Manion, and Morrison (2018), who acknowledge the use of a
34 reasonable incentive to encourage student participation, participants were given the opportunity of
35 winning a modest monetary 'prize'.

36 The participants included 40 students from four post graduate programmes (Table 1) in a
37 Scottish university.

38 Table 1 Participant characteristics

Characteristics	Total Number (N) Participants (Phase 1: Online Survey)	Total Number (N) Participants (Phase 2: Focus Groups)

Year of Study	1	14	2
	2	25	3
	3	1	1
Gender	M	7	0
	F	33	6

1

2 Phase 1 data collection used a three-part online survey consisting of Likert-scale and free-text
3 questions addressing professional and demographic information; the five facets of student experience;
4 and The Warwick-Edinburgh Mental WellBeing Scale (WEMWBS). WEMWBS is a 14-item, 5-point
5 Likert-scale including measures of eudaimonic, hedonic, and social aspects of well-being (Tennant et
6 al., 2007).

7 Semi-structured focus group interviews, with representation from online and on-campus learners from
8 three programmes (Table 1) were used in Phase 2 of data collection to enrich findings that emerged
9 during phase 1 analysis and to garner student voice in the development of school-wide practices.
10 Keeping in mind the vulnerable nature of action research to participants due to the potential day-to-
11 day organisational interactions (Cohen et al., 2018) between participants and researchers, steps were
12 taken to ensure anonymity of focus group participants. Focus groups were audio-recorded with notes
13 taken by the host to capture evidence of facial expressions, and body language not evident through
14 audio recording. Transcriptions were made, capturing various aspects of communication including
15 spoken word, inflections, tone, and emotion as a way of addressing the opaque potential of verbal
16 transcriptions alone (Cohen, Manion, & Morrison, 2002).

17 Quantitative survey data from phase 1 underwent descriptive analysis (percentages) with data sorted
18 according to positive (>56%), neutral (41-55%), and negative (<40%) responses to questions.
19 Qualitative survey data underwent thematic analysis. Each member of the research team reviewed a
20 selection of the qualitative data, negotiating and agreeing a thematic framework. The qualitative data
21 was uploaded to Nvivo and coded according to the thematic framework. These themes informed the
22 semi-structured focus group questions used in phase 2, from which the data was then coded using the
23 same thematic framework.

24 The following section reports our key findings offering interesting insight into the relationship
25 between well-being, emotion, and student experience.
26
27 Well-being and PGT student experiences

28

29 Building on previous research calling for focused attention on well-being in HE, (Steuer et al.,
30 2008; Houghton & Anderson, 2017) we explored well-being as a central aspect in student
31 experience. Participants completed the WEMWBS 14-item 5-point Likert scale measuring
32 hedonic, eudaimonic and social aspects of well-being (Tennant et al., 2007). Categorical
33 analysis was used in the interpretation of the data (Figure 2). Guided by the WEMWBS User
34 Guide (2015) the total possible score ranging from 14-70 was categorised in three ways,
35 according to high (60-70), average (43-59), and low (14-42) scores. Findings indicate

1 participant well-being scores ranged between 28 and 60, with 17.5% reporting low well-being,
2 85% scoring average well-being, and 2.5% reporting high well-being. In light of the well-being
3 literature that suggests a close relationship between well-being and learning (Boekaerts, 1993;
4 Ryan & Deci, 2001; Seligman 2012), this finding is positive.
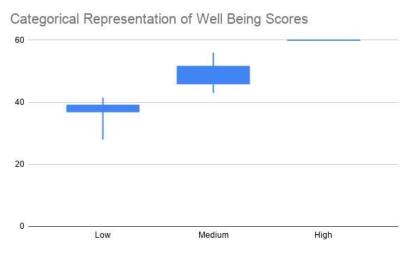
5
6 Figure 2 Categorical representation of well-being scores

7 A calculation of mean scores for each question provided a more granular level of analysis
8 (Table 2). Findings indicated over half (52%) of participants reported 'none of the time' or
9 'rarely' having energy to spare and a quarter (25%) of participants reported 'rarely' feeling
10 relaxed. In contrast 95% of participants responded positively (some of the time, often, all of the
11 time) to being interested in new things.

12 Well-being scores

13

14 Table 2 Descriptive statistics for participant well-being scores

Question	MEAN	STD DV	MODE	MEDIAN
* I've been feeling optimistic about the future	3.7	0.64847	4	4
* I've been feeling useful	3.625	0.585618	4	4
* I've been feeling relaxed	2.875	0.822364	3	3
* I've been feeling interested in other people	3.55	0.845804	4	4
* I've had energy to spare	2.575	0.902631	2	2.5
*I've been dealing with problems well	3.475	0.715667	4	3.5

* I've been thinking clearly	3.625	0.740322	4	4
* I've been feeling good about myself	3.525	0.750641	3	3
* I've been feeling close to other people	3.425	0.902631	3	3
* I've been feeling confident	3.475	0.816104	3	3
* I've been able to make up my own mind about things	3.85	0.852974	4	4
* I've been feeling loved	3.775	0.861945	3	4
* I've been interested in new things	3.875	0.921259	4	4
* I've been feeling cheerful	3.5	0.751068	4	3.5

1

2 Being interested in new things is a positive finding, suggesting participants possess a degree of
3 internal motivation for learning, which has positive implications for engagement, an essential
4 element that supports learning, flourishing, and quality of experience (Steuer et al., 2008;
5 Seligman, 2012). However, reported low energy and rarely feeling
6 relaxed are disconcerting in light of WHO (2014a) indicator that connects well-being with
7 one's capacity to cope with the normal stresses of life. These findings raise questions about the
8 capacity students have for coping with the stresses of normal life when coupled with the
9 stresses arising from study, and the implications for student experience. McPherson et al.,
10 (2017) report PGT students experience high levels of anxiety, with negative implications for
11 engagement, critical and creative thinking, and productivity. Beer and Lawson (2017) suggest
12 time and energy are two factors contributing to student attrition.

13 In our analysis we found emotion processes interact closely with psychological and sociological
14 processes, influencing student experience. The follow sections provide further detail.

15 Emotion processes and the PGT student experience

16 Our findings support the view that the student journey is defined by a multiplicity of factors and
17 interactions, underpinned by psychological and sociological processes (Tobell & O'Donnell, 2013;
18 Temple et al., 2014; Morgan & Direito, 2016; Muijs & Bokhove, 2017; O'Neill et al., 2007). Adding
19 to this, emerging from our findings was the role of emotion processes as a central and defining theme
20 to the student experience. Across their student journey, PGT students define the emotive nature of
21 their experiences, indicating feelings associated with challenge or threat including, "trepidation",
22 "pride" and "elation", "horror" and "frustration", as well as "shame" and "humility". One student
23 described feelings of isolation and the impact it had on her study experience: "There were times when
24 I would give up because I would be looking for something and not be

able to find it and I have nobody to ask. It had a very negative impact". At the same time, another student describes positive emotion, arising through overcoming challenge, "Sometimes I get a good grade and I think, 'Wow! So I am smart after all.'"

According to the BPS model, individual appraisals of threat or challenge paired with demand vs coping resource appraisals trigger specific emotion responses that lead to concurrent behaviours, either enhancing or inhibiting learner engagement (Jamieson et al., 2018). Our findings indicate three dimensions of the student journey inform challenge-threat appraisals, each acting independently and multi-directionally to trigger varied emotional responses that impact student experience.

Degree of connectedness

The degree of connectedness dimension was defined by students' perceived sense of belonging, identity, and relationships, each influencing motivation, arising through a sense of membership, academic identity, and comradery that promoted resilience during high stress periods:

> The most significant thing actually is my friends. Every lunchtime we go for a walk
> …past {---Hall] we visualise graduating. It has kept us going even at times when we
> felt ready to drop out… It's been the peer group.

Relationships are an essential aspect of well-being and quality learning (Deci & Ryan, 2008; Seligman, 2012), contributing to a sense of belonging (Matheson & Sutcliffe, 2018), which, according to Fisher et al., (2019) is a significant factor impacting a student's psychological processes, capacity to persist, and academic performance. Miller (2003) defines belonging in terms of establishing a connection through creating a sense of identity with the material, relational, and social surroundings. This idea emerged in our findings:

> Feeling included as a student at the university is important - belonging is a huge
> motivator for me.

> Identity as a student at the university is important. Having something, a cup, a
> lanyard – it makes a huge impact. I could feel like a part of the community.

> Sometimes even when there is no class, I could work from home, but I just want to
> come to the library because having people in the same situation working - here I have
> motivation.

Whannell and Whannell (2015) highlight the importance of motivation, suggesting students who enter study driven by internal motivating factors such as self or professional improvement possess a higher emotional commitment for establishing an academic identity. This understanding is reflected in our findings. The following comment provides context:

> This is what I've always wanted to do. In terms of ongoing motivation - passing all my academic
> portfolio has proved to me in first year I could do it. I worked really, really hard- probably a little
> too hard because I had a lot to prove to myself also to my local authority who are supporting me,
> and to life really.

Through a high emotional commitment Whannell and Whannell (2015) reason that students find resilience to overcome the negative impact of a threat to identity such as a poor grade, or negative interaction, enabling their continued student journey. Jamieson et al., (2018) suggest challenges and threats reside along a stress-response continuum, ever present in one form or another, and it is the students' appraisal of available coping resources vs demands that determine their position along the continuum. When a coping resource such as internal motivation, outweighs the demands of a task, the individual experiences positive emotions and behaviours that support immersive engagement (Jamieson et al., 2018), an essential element of deep learning, which is a defining quality of HE (Gunn, 2018).

Effectiveness of supports

A second dimension impacting emotion processes and student experience emerged from our findings. Defined by the perceived availability, access to, and quality of support, this dimension, when perceived positively served as a coping resource for students, leading to positive emotional responses and behaviours characterised by feelings of engagement, relatedness, and environmental mastery.

> The level of guidance from disability services has been great - can't fault it. I felt very supported. I have become a huge fan of the regular online meetings. Being able to drop in if I have any questions or if I am confused about anything related to the Masters – I can bounce ideas off and get support from my tutor.

In contrast, ineffective supports triggered negative emotion responses:

> It is comments like, 'You need to expand on this' when it is two words under the maximum word limit. - This is frustrating because I can't expand it because I have run out of available words. This sort of comment is not necessarily useful because they don't suggest where I could clip one thing to expand another.'

Heussi (2012) suggests teaching and learning for the PGT population has previously been overlooked, an idea echoed by a number of authors (Morgan & Direito, 2016; Tobbell & O'Donnell, 2013). According to Tobbell and O'Donnell (2013) this approach has been justified by the assumption that PGT students enter study with established academic competencies, developed through successful completion of undergraduate degrees. Emerging literature indicates otherwise, suggesting challenges of PGT study have the potential to trigger anxiety, feelings of isolation, decreased persistence, and reduced engagement, all characteristics that support attrition (Coneyworth et al., 2019; McPherson et al., 2017).

Focus group data provided clarity on the impact of negative appraisals to the student learning journey. An exchange between two participants provides context:

> There were times when I would give up because I am looking for online reading and I cannot find it and I have nobody to ask. It has a very negative impact.' (Participant 1)

> And that can last for days or weeks … if you hit one of those roadblocks - not finding a text; not having communication with everybody - it completely side railed me for weeks.' (Participant 2)

According to Henard and Roseveare (2012) quality teaching must attend to learning environments, curriculum design, course content, use of feedback, assessment, tutor-student relationships, and student support services. Houghton and Anderson (2017) call for a focused discussion of well-being as an essential element of quality teaching. Borrowing from Steuer et al. (2008) they suggest well-being is achieved in teaching and learning through supporting students to develop a sense of agency and autonomy, paired with strong relationships and environmental mastery leading to feelings of competence. Through this understanding, these authors argue the deep learning, and transformation that defines higher education becomes possible.

Sharing natural synergies with the aforementioned Effectiveness of Supports and Connectedness dimensions through its capacity to influence learning, academic identity, sense of membership, and self-efficacy, a third dimension: Quality of Communications, emerged from our findings.

Quality of communications

Defined by the students' perceived sense of efficiency of communication, tone of communication, and clarity of response, this dimension served as an important coping resource for PGT students. One student summarised this in the following way:

> It is good to know, what is the purpose of the Enquiry Centre other than when I matriculate and to pay fees? What about Council Tax? How about the library? ...The fact that there is cold and hot water in the library - you know, boiling hot water upstairs… knowing that has been invaluable because our fees are £10,000 a year and we are self-funding, so every penny counts.

When information is not clearly communicated it is appraised as a threat, prompting negative emotion:

> For me the biggest thing is getting the right information, the relevant information, to the right person. I get so confused at times.

> There was very poor communication… Given the high demands of the course and given that most students work part time to be able to afford to study, this is frustrating.

Tutor feedback was a significant factor in student experience. Effective feedback was defined as "ongoing" and "specific'" about the "strengths and next steps". While poor quality feedback was defined as "excessive", and non-content specific. Feedback of this nature triggered negative emotion responses explained in the following way "the students were completely demoralised, they were in pieces…In terms of their own self-esteem and self-worth they were rock bottom".

Temple et al., (2014) suggest feedback is a primary area of concern arising from student experience surveys. According to Cann (2014), and in line with our findings, PGT students are most concerned with the timeliness and relevance of academic feedback. QAA (2018) suggests optimal learning relies on students developing their understanding of and value for feedback, indicating provision should be made to ensure multiple means of engagement with feedback. We propose the use of feedback to support positive well-being has been overlooked in teaching and learning, and a redefining of the purpose and use of feedback to promote agency, strong relationships, and environmental mastery is needed. Through this lens it is possible to reason, feedback could become a primary coping resource to support students overcome challenge and threats during their study journey.

The following participant comment provides insight into the positive impact of quality communication on student sense of belonging:

> All of the positive emotions I have felt have been when there has been communication and interaction with other people …. the negative emotions I have felt, are directly related to lack of communication.

Temple et al. (2014) signal the importance of effective communication during the application process, indicating it "sets the context for later experiences" and is a "crucial" aspect of the student journey (p. 13). Our findings indicate effective communication is important across all facets of the student journey, serving as a positive coping resource supporting positive emotions, engagement, and student experience.

Emotion processes, well-being, and transformation

Resoundingly, participants expressed a sense of transformation through their student journey:

> The process has really made me feel that I am capable of more than I realised, and that is something that is going to stick with me for the rest of my life. It's been very empowering.

Emotional and cognitive challenges, paired with reflective processes were important in the process of transformation:

> Emotionally I enjoy it. It is challenging, and at times I feel I can't do this anymore. I am done and everyone in the course feels that. Then there is the content of our course - it makes me question who I am and what I believe, so we talk about what is reality? We really drill down to our core beliefs… I think I know my stuff and it strips you back professionally and personally and then you rebuild….

This finding is in keeping with Mezirow's transformative learning theory, suggesting the student journey equates to a process of transformation characterised by disorienting dilemmas; engagement with critical reflection leading to self-examination, and exploration of new ways of thinking, acting, and interacting (Mezirow, 2000). Through their experiences students acquired new knowledge and skills, developed competence and confidence, and shaped identities, leading to a sense of self-actualization, which Ryan and Deci (2001) equate to optimal well-being. According to Steuer et al., (2008) transformation that enhances learner well-being has the potential to enhance the broader well-being of the economy, environment, and society. Evidence to this effect emerged in our findings:

> I think this was a great opportunity for me to learn the importance of what growth means. I have taken this as an opportunity to grow both as a person, as a student, as a mother, as a wife, and a teacher. I feel that in all those aspects of my life that I have become a better person; it has helped me in so much understanding myself… I was able to see the benefits of this opportunity and use it in my life.

A common thread in transformation is the ability to overcome – be it a challenge, threat, or disorienting dilemma, (Jamieson et al., 2018; Mezirow, 2000). This idea was expressed by PGT students in this study. The following participant quote provides context:

> I have learnt an awful lot. I have grown an awful lot - even in those times that were demotivating I also think, 'Well, I couldn't be doing all that bad because I have gotten through it all' and it is that feeling that builds you.

Taylor (2017) defines learning as a transformative process involving the acquisition of knowledge as a result of the transformation in knowledge structures, feelings, personality, and relationships with others. These student testimonies speak to the transformative potential of the student journey, signalling emotion processes and coping resources including relationships, effectiveness of supports, and quality of communication are defining factors that influence student experience.

Through this lens, and in keeping with emerging views (Muijs & Bokhove, 2017; QAA, 2018; Steuer et al., 2008; Temple et al., 2014; Tobbell & O'Donnell, 2013) the current approach to measuring and understanding PGT student experience in terms of satisfaction is insufficient to capture the complex psychological, sociological, and emotional processes that define student experience.

Whilst the scale of this study places limitations on how broadly the findings can be extrapolated and interpreted, we can reaffirm the role of psychological and sociological processes (O'Neill et al., 2007) as well as conveying a clear indication of emotion as a third process interacting in student experience.

Conclusion

In this study we conceptualised the PGT student experience as a multifaceted student journey informed by five facets related to subject discipline, institution, and wider-socio-cultural factors all underpinned by well-being. Through our exploration we have come to understand PGT student experience as an emotionally rich process influenced by three dimensions of the student journey, degree of connectedness; effectiveness of supports; and quality of communication, that elicit threat or challenge appraisals based on perceived demands and coping resources, triggering emotion responses that impact wellbeing, and learner engagement.

Our findings serve to reinforce and further inform the understanding that the PGT student experience is uniquely complex (Beer & Lawson, 2017; Tobbell & O'Donnell, 2013; Morgan & Direito, 2016; McPherson et al., 2017; Coneyworth et al., 2019).

Characterised by intense and abbreviated study times, student experience operates in between a myriad of other commitments including family, and work, all interacting to impact well-being through stress arising as a result of time pressure and lack of energy, two factors directly attributed to student attrition (Crosling, Heagney, & Thomas, 2009).

Our findings suggest the quality of experience and capacity for learning is dependent upon each student's appraisals of three dimensions of the student journey, which serve to support or hinder their ability to overcome heightened emotion arising during study. Through this understanding resides the potential to redefine PGT student experience in terms of challenge or threat to well-being and learning, and to respond to dimensions of the student journey that can be developed to maximise coping resources while minimising threat.

We anticipate these findings will contribute to the wider discussion of PGT student experience within the HE sector, and prompt reflection and developments relevant to differing academic contexts. An illustration of this, and in keeping with the action research approach, the following programme developments have been inspired by the findings:

- Video recording of the Principal's welcome address for distance learners (identity and belonging)
- Enhanced Advisor of Studies role (pastoral care and emotional/cultural transitions)
- Assessment working group (quality of feedback)
- Programme focus groups (communication, belonging)
- Repeated induction (academic skills, language issues and supports)

Through the cyclical nature of action research (Callison, 2007) we will continue our exploration of student experience as a multi-faceted journey underpinned by well-being, allowing for findings to be compared over time and between groups. Whilst the themes emerging in this study and the associated conceptualisation of the student experience suggest some generic areas of focus and response, it is equally evident that student experience is by definition individualised and bespoke. This highlights the need for the HE sector to continue to meet the needs of their student population in a flexible, reflective, and holistic manner.

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1   **Appendix III: Article 3 (White & Ingram, 2021)**

2

4   **Embracing the complexity: a multifaceted and inter-sectional model of Taught**
5   **Postgraduate student experience**

6
7   Wendee White & Richard Ingram

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Embracing the complexity: a multifaceted and inter-sectional model of Taught Postgraduate student experience

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ABSTRACT

Postgraduate taught student experience (PGT) is the product of a complex journey. During study, PGT students face an array of emotions and stressors associated with biopsychosocial-cultural processes interacting in, across, and in response to various dynamic systems that serve to threaten or challenge their study journey, making wellbeing an important factor in their experience. This paper unfolds and examines the utility of an integrated model for exploring, understanding, and responding to student experience according to these interacting processes and dynamic systems. Using an integrated framework, we conceptualise student experience as a transactional process arrived at through person–environment interactions informed by the synergistic effect of biopsychosocial-cultural processes, emotion responses, and wellbeing. We use a meta-appraisal approach to explore the intra and interpersonal processes that inform PGT student interactions in and across the complex systems of higher education and the role of the student as an active participant within their own eco-system. This approach is appealing as it engages multiple perspectives, exploring the individual according to four intersecting, ontological dimensions: mind, body, culture, society and overcoming any ontological or epistemological priorities assigned through a reductionist lens. Through this multifaceted conception we propose new potential for enacting practices and contexts to actualise the transformative potentials of higher education to support sustainable development.

Introduction

Taught Postgraduate (PGT) student experience has largely been studied through the lens of student satisfaction, befitting what might be viewed as the traditional business-oriented approach of Higher Education (HE) and including knowledge transfer for the interest of economic growth and institutional development (Steuer, Marks, and Murphy 2008; Morgan and Rigby 2014; Coneyworth et al. 2019). However, current writers on sustainability (Grau et al. 2017; Abdul Razak, Wan, and Sirat 2017; Cai, Ma, and Chen 2020; Ronen and Kerret, 2020) highlight a new imperative that supports individual growth and transformation through a focus on wellbeing, proposing HE has a central role that requires a wider responsibility beyond economic interests. Proponents argue sustainability relies on the interconnectedness of personal, social, environmental, and economic wellbeing; at the heart of this is a focus on the individual, prophesising that building individual capacities will create a cascading effect, benefitting societal, environmental, and economic wellbeing with positive implications for global sustainability (Cai, Ma, and Chen 2020; Ronen and Kerret, 2020).

Within this emerging movement, it is argued that Higher Education's role is to support the development of the whole person, fostering knowledge, skills, abilities, and attitudes to transform learners through improved capacities of critical, creative, and innovative thinking, and social connectedness, with the potential to influence respective communities and entire societies (Grau et al. 2017). Achieving such goals, Steuer, Marks, and Murphy (2008) argue requires new research approaches that position wellbeing as central in student experience, contending this broader

perspective will support the sustainable development goals of higher education to transform the individual and society (Gillard 1997; Abdul Razak, Wan, and Sirat 2017).

This emergent recognition informs the writing in this paper, which unfolds a conceptualisation of PGT student experience through the lens of wellbeing. We begin by exploring the relevance of wellbeing in PGT student experience before examining the praxis of our conceptualisation through an examination of the theoretical underpinnings and practical application.

A focus on the experiences of taught postgraduate populations (PGT) through the lens of wellbeing has relevance. This population by definition will contain many future professionals and leaders. Their success at Masters level infers the development of capacities necessary to influence and inform the wellbeing and behaviours of others through their connectedness within family, community, and in employment sectors. In addition to this, the PGT student population is increasingly diverse, and the trajectory of their journey is complex. This is an increasingly heterogeneous student group, representing 25% of the total student population in the United Kingdom, with approximately one third being from overseas (Higher Education Student Data (HESA) 2019). During study, PGT students face an array of emotions, and stressors associated with social, cultural, psychological, institutional, and discipline-specific factors that serve to threaten or challenge their study journey, making wellbeing an important factor in their experience (Tobbell and O'Donnell 2013; Coneyworth et al. 2019; Ingram and White 2020).

Further, the pluralistic nature of this population as connected, contributing members of family, community, society, and workforce alerts us to the multiple identities that PGT students may hold in terms of culture, familial networks, professional roles among many others. It is important to recognise that 'students' as a category of identity is not static and/or mono-dimensional rather it is fluid and interfaces with other identities. This paper will acknowledge this fluidity and the implications this has for considering how to understand well-being within the student experience. Identity, whether linked to group membership or more individually held, can be seen to be important in terms of well-being (Stets and Serpe 2016).

The PGT student experience and the importance of considering this through the lens of well-being encourages us to engage in a meta-appraisal of the multiple layers of interactions, supports, challenges and intra-personal emotional responses. We can view the students as actors within the complex system of the higher education sector and consider the structural and environmental factors which can facilitate or compromise the experience and performance of students. Or as we will in this paper, locate the individual student within this labyrinthine system and explore the interaction of individual identity, capability, emotions, and efficacy within this. These two strands are best not viewed in a binary manner where solutions and developments are sought in isolation but rather that they be understood as an inextricably linked dynamic system. Guided by an integral-holism paradigm we adopt a meta-theoretical framework (Wilber 1997; Lazarus 2000, 2006b; Bronfenbrenner and Morris 1998; Bronfenbrenner 2005; Crenshaw 1991) exploring student experience as an ensemble of 4 intersecting ontological dimensions of the person including, the mind, body, culture, and society. Such an integrated approach acknowledges the interplay and intersectionality of biopsychosocial-cultural processes operating during person–environment interactions in and across a web of systems to inform student experience. This paper seeks to illuminate and conceptualise the PGT student experience within an integrative framework which is intended to contribute to the insights and practices within the sector and in turn improve the student experience and the likelihood of meeting the broader ambitions of higher education.
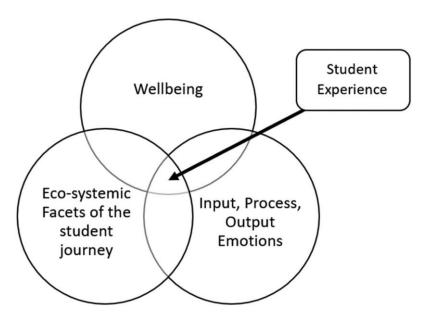
Figure 1. Student experience: the relationship between facets of the student journey, emotions, and wellbeing.

We propose PGT student experience is the subjective representation of the phenomenological nature of the lived reality; having valence, amplitude, and salience, it is shaped by the interplay of biopsychosocial-cultural forces, wellbeing, and a student's interactions across eco-systemic facets of the student journey (Jarvis 2007; Schiffer 2019). The defining themes of our paper are presented below in our initial graphic of the PGT student experience (Figure 1). It illustrates the intersectionality of the aforementioned themes and the location of the student experience within it.

In the next section we explore and expand on our core themes beginning with wellbeing as a factor in student experience, informed by the interactions of emotion processes and eco-systemic facets of the student journey. We interrogate these ideas further using Bronfenbrenner and Morris' process-person-context-time model (PPCT) (1998, 2005) as a principal focus for broadening our understanding of the person–environment interactions and ecologies that define the PGT student journey, shaping wellbeing and informing student experience. Following this and using our own previous research exploring PGT student experience (Ingram and White 2020) we drew from a composite of our findings to construct a hypothetical case study illustrating a student's experiences during PGT study. Through this approach the reader can examine and assess our conceptualisation of student experience as a transactional process arrived at through the influence of inter and intrapersonal processes operating across interconnected ecologies and giving rise to emotion responses that inform wellbeing and ultimately shape the student experience. This paper should be of interest to educators, researchers, institutional leaders, and policy makers invested in supporting PGT curriculum delivery, attainment and retention, and achieving the transformative potential of higher education.

Wellbeing and emotion in the PGT student experience

Wellbeing is an overarching state of being that reflects the emotional, psychological, and social health of an individual; influenced by the capacity to cope with daily life stresses, it informs human functioning (Keyes 2005; World Health Organisation 2014). Arguably, wellbeing is a significant factor in PGT student experience, interacting reciprocally with learning to support developing higher order capacities and competencies including autonomy, research competence, critical discourse, social exchange, and professionalism that are essential to successful engagement with the increasing complexity and unpredictability that defines PGT study (QAA 2013, 12).

Integral to the relationship between well-being and learning is emotion (Boekhaerts, 1993). The hedonic and eudaimonic measures that define wellbeing, reflect the integration of social, emotional, and psychological processes operating in response to person–environment interactions and informing an individual's cognitive engagement, social connectedness, productive working, and life satisfaction (Lazarus, 1991; Keyes 2005; Dodge et al. 2012; World Health Organisation 2014; Disabato et al. 2016). Within the mutual entanglement of these processes, emotion acts as a central organising construct. It is a defining factor in how an individual engages with and responds to the world; influencing stress-related cognitive appraisals of challenge, threat, or benefit, and arising in response to perceptions for coping that influence social functioning and wellbeing; it is a conduit between mind and body and a primary source for accessing an individual's experience (Wilber 1997; Lazarus, 1984; Lazarus 2000, 2006a; Maiese 2017).

Dodge et al. (2012) contend there is a set point of optimal well-being, and a delicate balance exists between this point and an individual's perceptions of coping with daily life stressors that influences learning potential. Through this lens, emotions act like the fulcrum, central to the balance of wellbeing, and acting in partnership with stress and coping to create a conceptual whole that informs cognition, motivation, and enacted behaviour (Lazarus, 2006b; Lambert et al. 2020). Lazarus and Smith (1990) define this emotion-learning relationship in terms of situational appraisals of challenge and threat and the relational meaning derived during person–environment interactions that inform coping. The appraisal of stress and subsequent perceptions of coping are subjective in nature, varying as a product of interconnected cultural, social, and psychological experiences informed over time. They are further influenced by the situational demands and psychological attributes of the stressor as controllable, unpredictable, ambiguous, or uncertain with the potential to heighten or mitigate emotional responses and impact sustained wellbeing (Lazarus, 2006b; Anisman, 2014, p.41; Jamieson et al. 2018).

This has relevance within the PGT student population, whose wellbeing is challenged during transition to and through study as a result of varying student backgrounds, cultures, prior learning, anxieties about master's level study, and performance-oriented goals and aspirations (Morgan 2014; Coneyworth et al. 2019). The diverse nature of this population, who increasingly are comprised of non-traditional, ethno-culturally diverse, and multilingual learners (Bird 2017; Morgan and Direito 2016) highlights the complexity of the emotion-learning relationship across the student journey and its implications to sustained wellbeing. Throughout their journey PGT students encounter an array of stresses, anxieties and concerns unique to their study and in addition to normal life circumstances (Tobbell and O'Donnell 2013; Morgan and Rigby, 2014; Coneyworth et al. 2019). How these are overcome, minimised, or eliminated to sustain wellbeing and learning, depends on the stress-emotion-coping relationship, and an individual's embodied awareness of the cultural, social, individual, and behavioural dimensions of the world around them, the situational demands and psychological attributes assigned to each experience (Lazarus, 2006b; Esbjörn-Hargens and Foucaultii 2007).

Houghton and Anderson (2017) cite the value of higher education to well-being, acknowledging sustained positive emotion-learning relationships support personal development, resilience, and gains in social and economic environments that directly impact family and community. In contrast, they highlight the negative potential that arises when the relationship between learning and well-being is threatened through negative affect and heightened stress (Stecker 2004; Anisman 2014).

Through this lens, they propose wellbeing has a central focus within higher education.

Bronfenbrenner's (2005) Process-Person-Context-Time model (PPCT) is a useful framework for exploring these ideas as they relate to PGT student experience. It is an integrated framework that presents an individual's development as the product of a reciprocal transaction between the person and environment, and involving proximal processes synergistically influenced over time as a joint

function of sociological, cultural, biological, and psychological phenomenon, and according to specific developmental goals (Bronfenbrenner and Morris 1998; Prati et al. 2019). The PPCT model has utility for exploring PGT student experience as both a phenomenological and distributed phenomenon shaped through the interplay of biopsychosocial-cultural interactions across multiple eco-systemic facets of the student journey. For example, while the subjective nature of PGT student experience is a result of the individual's phenomenological reality, the contextual truth that defines that reality influences the interpersonal interactions which in turn create a distributed phenomenon, or ripple effect, through the influence of these interactions on the inter and intrapersonal processes that define another individual's subject experiences. Using the PPCT model it is possible to explore person-environment variables as interactive determinants and antecedents of stress and coping that inform emotion responses and wellbeing.

Process-person-context-time model and student experience

Within the PPCT model Bronfenbrenner acknowledges the active role of the individual interacting across multiple contexts over time and involving people, objects, activities, and semiotics (Smith and Lazarus 1990). The proximal processes that define the quality of these interactions are influenced by an individual's intra-personal characteristics that shape personality, disposition, and temperament (Jaeger 2016). Such characteristics include the biological resources: genes that inform an individual's knowledge, skills development, and ability; innate trait-based dispositions that inform an individual's affiliation towards age, race, and ethnicity; and the psychosocial forces: cognitive, emotional, and motivational resources that develop over time and through experience (Bronfenbrenner 2005). These forces shape the temperament, persistence, engagement, and resilience of an individual and ultimately inform the direction and power of proximal processes and subjective experience (Jaeger 2016). Directly connected with physiological responses, these forces act as the ultimate determinant in the stress-coping relationship, emotion responses and enacted behaviour when all other person characteristics and contexts are equal, making them a focal point in the person–environment relationship (Lazarus and Smith 1990; Bronfenbrenner and Morris 1998).

Within our conception, we position emotions as a central organising construct in PGT student experience, underpinning the form, direction, content, and power of the proximal and distal processes through their relationship to appraisals of stress and coping, with direct implications to wellbeing (Dodge et al. 2012). Through this focus, the cognitive-evaluative nature of emotions becomes apparent through the appraisals of stress, the subsequent perceptions of coping, and the resulting emotion responses. Using the PPCT model the stress-emotion-coping relationship can be explored according to the antecedent motivational and belief variables that are influenced by previous experiences, biological factors, and socialisation processes that exist across eco-systemic facets of the student journey (Lazarus and Smith, 1990; Anisman 2014; Jamieson et al. 2018).

This is a significant idea, given current research that indicates PGT students enter study with diverse expectations; varied knowledge, skills, and understanding influenced by wide-ranging learning experiences, cultural norms, and reasons for pursuing a PGT degree (Tobbell and O'Donnell 2013; Morgan and Direito 2016; McPherson et al., 2017; Coneyworth et al. 2019; Ingram and White 2020). The myriad of PGT student characteristics becomes a genesis for varied stresses, and heightened emotions during the study journey with implications to the student experience.

Using Bronfenbrenner's PPCT in the next section we advance our discussion exploring the distributed phenomenon of the student journey arriving at five eco-systemic facets within which the student is entangled and that serve to facilitate or compromise the person–environment interactions and proximal processes that define the PGT student experience.

Networked and nested ecologies

Drawing from earlier iterations of his work, Bronfenbrenner's PPCT model identifies contexts as a series of hierarchically ordered systems, nested as concentric circles that extend outwardly from the individual, to depict the influence of proximal to distal ecologies on development (Darling 2007). However, various authors identify limitations to this depiction and propose a need for revisions (Neal and Neal 2013; Jaeger 2016). Neal and Neal (2013) propose a networked arrangement for the three inner-most rings while maintaining a hierarchical configuration extending outwardly from the individual. Within our conceptualisation this revision more accurately reflects the complexity of the person–environment interactions, activities, events, and semiotics enmeshed in a web of interacting ecologies that define the PGT student journey. Figure 2 is illustrative of the combined networked and nested ecological system depicting the PGT student as the focal individual.

At the inner most circle, the *microsystem* includes a network of environments most immediate to the individual and involving face to face interactions (Downes 2014). For the PGT student this includes family, friendship groups, academic staff, work, and study-related activities. These microsystems are not mutually exclusive; they are networked and interconnected through the movement of the individual within and between settings. The quality of person–environment interactions involving the focal individual in one setting are informed by causal antecedents, situational demands, personality variables and the relational meaning ascribed by the individual to the interaction which have been shaped through time and experience within and across each microsystem. The imputed meaning gives rise to emotions that are indicative of an individual's perceptions for coping with implications on wellbeing and subsequent behaviours in and across each microsystem (Bronfenbrenner 2005; Lazarus, 2006b).

As an example, Ingram and White (2020) found quality of feedback acted as either a threat or benefit to students' goal-oriented behaviours triggering heightened emotions with direct implications to sense of self-efficacy. Feedback that was timely and direct, providing clear areas for development gave rise to positive emotion responses. However, feedback that was lengthy and hypercritical was deleterious
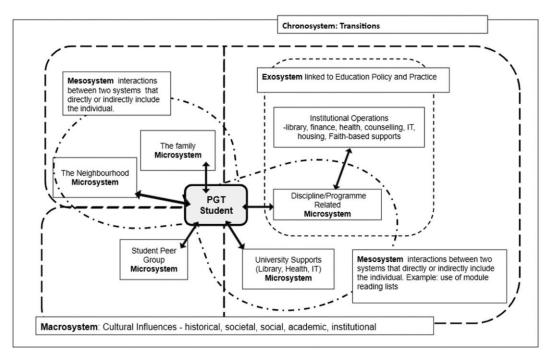
Figure 2. An illustrative example of a networked and nested ecological system for a PGT student.

to students' sense of self efficacy. While the relational meaning ascribed to this feedback gave rise to emotions that threatened students' goal-oriented behaviours including motivation, sense of belonging,

and academic identity within this microsystem, there are implications to diminished self-efficacy across microsystems through the negative impact to sense of self.

Next in the hierarchy is the *mesosystem*. It includes relationships or connections between two or more microsystems. Interactions at this level are unique for each student depending upon the features (part-time, full-time, in-work, research-based, on-campus, online, international) that define the study journey (Tobbell and O'Donnell 2013). Broadly, Frielick (2004) highlights the importance of university microsystems to the student journey. He defines teaching and learning as an 'ecosystemic process' (p. 1) dependent upon both quality teacher-subject-student interactions and wider university services all supporting entry to study processes, in-study processes, and output processes (QAA 2018; Gunn, 2018). Through mesosystem interactions involving, for example, library services, disability services, IT services, and academic staff it is possible to develop what Henard and Roseveare (2012) define as quality teaching and learning experiences through the design and development of learning materials, resource, and access support, learning contexts, and approaches to assessment.

Distal to the mesosystem is the *exosystem*, where linkages and processes between two or more settings not including the developing person occur. Interactions between settings in this system lead to events that affect the setting containing the individual (Bronfenbrenner 2005, 148). Current COVID-19 events provide a prime example for defining exosystemic interactions that influence the PGT student population. Interactions between government, healthcare, and institutional leaders, have influenced new policy and practice changes across UK universities, with implications to the PGT student experience through with programme changes related to graduation, remote study, and access to student services; such changes have implications for (Universities UK 2020).

Next, the *Macrosystem*, plays an important role interacting with all other ecological levels, defining social roles and relationships (Bronfenbrenner 2005, p. xv). It is defined by cultural influences that shape an individual's attitudes and values. Daniels, Lauder, and Porter (2012) remind us of the multiplicity of culture; each affiliation influencing an individual's cognitive and emotion resources and shaping attitudes, values, beliefs, identities, and behaviours. Through their intersectionality, they inform an individual's perceptions of the world and the world's perceptions of the individual (Crenshaw 1991). *Time* is a constituent part of these cultural complexities, shaping interpersonal interactions through within society generational differences and capacities to navigate cross-cultural differences (Lewis 2010).

Culture is a defining aspect of PGT student experience, directly related to student identity and sense of belonging, and an important motivating force for student success, promoting engagement within the environment (Gale and Parker 2014; Bin Ai 2017). However, for PGT students who are increasingly comprised of non-traditional, ethno-culturally diverse, and multi-lingual learners (Bird 2017; Morgan and Direito 2016), inculcation to the academic culture can present challenges (Maassen 1996). PGT students enter study with varying knowledge, understanding, practices, and expectations informed through diverse cultural histories, combined with in-society differences including age, gender, and social class. Intercultural understanding or lack thereof influences quality of teaching, capacity for international students to build relationships, and to develop interpersonal openness (Menzies and Baron 2014; Bird 2017; Gbadamosi 2018) all contributing factors in learning with implications to student success (Jarvis 2007). The kaleidoscope of cultural variability that defines the PGT study population puts them at risk of culture shock (Ward, Bochner, and Furnham 2015); a resistance and inability of different cultures to be able to interact positively within a microsystem. Over time culture shock contributes to a lack of belonging, which is essential to student success, supporting student resilience in overcoming the complex demands of higher education (Rienties et al., 2013; Bessant 2018); through this lens, culture shock is a direct threat to wellbeing and student experience.

Nested as the outer ring of Bronfenbrenner's model, is the chronosystem, representing 'change or continuity across time' as a result of interactions across systems and involving the individual and their

immediate environment (Bronfenbrenner 2005, 119). Chronosystem-level events can be conceptualised as transitions. Defined as ongoing, perpetual, fragmented and interpersonal events, transitions involve whole-of-life fluctuations or changes within and across interacting ecologies with implications to development (Gale and Parker 2014; Jindal-Snape and Rienties 2016).

For the PGT student, the movement into, through and beyond the student journey is rippled with whole of life transitions. Unfamiliar learning environments paired with diverse expectations of Masters-level study requirements; challenges associated with forming new relationships; cultural adjustments, cognitive demands, and language barriers give rise to heightened emotions, which for some are emancipatory, and for others overwhelming.

Such transitions are influenced by inter and intrapersonal processes operating across the hierarchy of ecological systems that actively involve the individual, family, professional, institution, and policy (Darling 2007; Gale and Parker 2014; Jindal-Snape and Rienties 2016). The interconnectedness of this system across all other ecologies makes it is possible to identify how interactions in one microsystem can support mediating influences of stress appraisals in another system. At a micro- level, student transitions can be supported through family connections paired with developing peer and tutor relationships that provide essential psycho-social support leading to feelings of belonging (Rienties et al. 2013). At the meso-level, O'Neill et al. (2007) suggest PGT student transitions should be supported by a university community approach. Through system-level cooperation that unites academic, administrative, and support staff, challenges of PGT student transition can be overcome by establishing positive peer interactions, building a student's academic identity, and promoting their sense of belonging (O'Neill et al. 2007), leading to positive student experience.

Eco-systemic facets of the student journey

Using Bronfenbrenner's PPCT model (2005) we have examined various ecologies of the student journey, affirming its complex and multifaceted nature, influenced by institution-related, discipline specific, and socio-culturally informed interactions (Temple et al. 2014; Ingram and White 2020). To this point, five important understandings have emerged that are relevant within our conceptualisation of the PGT student experience:

(1) PGT student interactions are influenced through a hierarchical arrangement of networked and nested systems.
(2) Proximal to the PGT student there are three levels of networked systems, contextualised as settings. These include, but are not limited to, family, neighbourhood, university services, programme of study, and peer groups. Within these settings the PGT student is a either a direct or indirect participant.
(3) The PGT student's interactions in or between these contexts influences interpersonal processes creating a 'ripple effect' according to the implications of one student's experiences on another.
(4) Indirect or direct interactions between participants from settings that do not directly contain the PGT student, have implications for the student experience.
(5) Whole of life influences, including culture and transitions, are nested in the ecological framework because they interact across all ecological levels and have long ranging influence on the PGT student with implications to student experience.

As a way of illustrating the array of contexts, networked and nested within and across each ecological level, that influence student experience, we introduce five facets of the student journey: academic, university services, daily life, culture, and transitions. Within each facet we acknowledge the possibility exists for identifying previously unknown or overlooked contexts informing student experience. Whilst these nested contexts may vary in nature across institutions, we believe they are generic enough to ensure applicability across the Higher Education sector.

Academic

This includes all programme-related contexts, learning environments, tutor–student interactions, learning materials, advisor of study interactions, programme-related policy, assessment and feedback activities, and administrative practices.

University services

This includes interactions involving IT services, Library services, Health and Counselling, Student Services,
Finance and Housing Services

Daily life

Relates to contexts that are external to study; possible contexts include work, family, and needs-based contexts, food, banking, health and hygiene, social events.

Culture

Reflects the multiple cultural affiliations over time that influence an individual including, as a possibility, family and regional cultures, social cultures, peer cultures, and academic culture.

Transition

These contexts are embedded across the ecological levels and define experiences on entry to, throughout, and exiting study. Admissions, induction, programme orientation, annual progression through study, and graduation are possible contexts where PGT students experience transitions.

Through this section of writing we have unfolded an examination of student experience as a product of person–environment interactions defined by and giving rise to cognitive appraisals of stress, perceptions of coping, and emotion responses that inform social functioning and wellbeing. Through an amalgamation of stress-emotion-coping theory and the PPCT model the synergistic effects of force characteristics and socio-cultural factors interacting within and across various eco- systemic facets of the student journey to influence wellbeing become an integrated framework for exploring the subjective and objective nature of student experience. We represent this conceptualisation in our culminating model of the PGT student experience as seen below (Figure 3). In the next section, we introduce a narrative case study (Ingram and White 2020) providing the reader opportunity to examine the utility of our model as we analyse the inter and intrapersonal interactions and emotion processes of one PGT student in and across various systems and how these define her student experience.

Gelman and Basbøll (2014) recognise narrative writing within social science research as a useful tool for illustrating a model and for supporting readers to engage with the development and evaluation of theory (p. 548). We acknowledge student experience is fundamentally subjective in nature and therefore unique to each person according to the interactions of biopsychosocial-cultural forces acting over time. We propose a narrative case effectively supports a reflective examination of our conceptualisation highlighting for the reader the dynamic, multi-layered interactions, supports, challenges, and intra-personal emotional responses that inform PGT student experience and through that rests the potential for identifying the flexible nature of our model as an effective conceptualisation for exploring student experience.
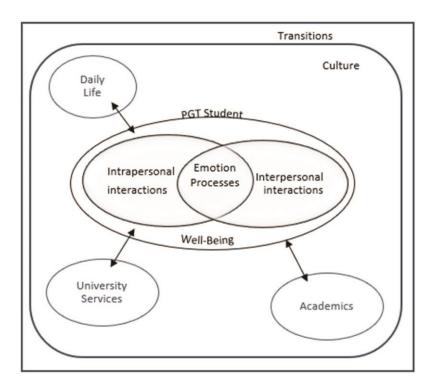
Figure 3. PGT student experience: the product of intra and interpersonal processes occurring across eco-systemic facets of the student journey, giving rise to emotion responses that inform wellbeing.

The ideas presented in this narrative case are drawn from our own previous research exploring PGT student experience (Ingram and White 2020). We use a composite of our findings to construct a hypothetical case study illustrating a student's experiences during PGT study.

A narrative case study exploring an integrated framework approach for understanding and responding to PGT student experience.

Martha's story

Martha is a second-year part-time distance learning, online Master of Education student. She balances study with full time work as a primary classroom teacher and her family responsibilities which include caring for her two children, ages 5 and 7. Martha describes herself as a confident, ambitious professional, who is motivated to complete her studies for the purpose of promotion.

As a mature student, Martha feels determined about her studies. This has been a long-time dream for Martha. Now, she is excited to study and steadfast in her drive to pursue her professional goals. From her initial contact with the university, Martha felt a sense of relief. She had found staff helpful and supportive, which was an asset in overcoming the rising anxiety she felt in response to unfamiliar jargon and protocols that needed to be followed in order to submit her application.

Martha describes her peer group as a mutual source of resilience during stressful times on her study journey. She recalls a time in her second year of study when her family and work-related responsibilities became overwhelming, interfering with her capacity to engage with study. When this happened, Martha found herself feeling vulnerable, doubting her potential for success in the program, wondering about her professional ambitions, and resenting the financial implications of study paired with sacrifices to family time. In these moments, her peers provided the emotional support she needed to persevere.

Martha has one more year left in her 3-year programme of study and although she admits there will be challenges to come, she feels she is gaining the knowledge and skills needed to be successful at

this level of study. Martha feels grateful for the support she has had from her peers and tutors. Martha dreams of the day she has her degree, and she can hold it up proudly with her family, celebrating together all their sacrifices and hard work.

PGT student experience as an integrated framework

Martha's narrative is illustrative of the complexity of PGT student experience; it highlights the labyrinthine of systems and the synergistic effects of intra and interpersonal processes giving rise to emotions with implications on wellbeing that define PGT student experience.

As a full time, teacher, mother, and part time student the multiplicity of systems within which Martha is enmeshed shape her student journey, interfacing in ways that are both supportive and threatening to her experience. As a supportive measure, Martha's strong peer relationships provide her the psychological and emotional coping resources to overcome periods of high stress during study. The psychosocial benefits of strong peer relationships promote a positive sense of belonging for Martha, which has far reaching effects on student identify and academic performance (Matheson and Sutcliffe 2018). For Martha, the emotions arising in response to her positive peer relationships mitigate against her negative emotions of self-doubt, which arise in response to her stress-related appraisals associated with work-life-study balance. These act as a threat to her wellbeing through a declining sense of self-efficacy, which is reflected through feelings of self-doubt in her ability to achieve her PGT goals. If left intact, these feelings threaten engagement, persistence, and academic success (Freire et al. 2020).

Through this example, we highlight coping as a central part of emotion processes, mitigating against heightened emotion responses that threaten wellbeing and learning, and pre-empt subsequent negative biopsychosocial responses that threaten student experience, including decreased cognitive engagement, social connectedness, productive working, and self-efficacy (Lazarus, 2006b; Freire et al. 2020; Lambert et al. 2020). Lazarus (2006b) reminds us the process of ascribing relational meaning to any experience is ongoing; it changes according to the person–environment interactions, situational demands, and psychological attributes of the stressor assigned by the individual and giving rise to varying emotion responses. In Martha's story, stress-related appraisals arising through her experiences in family and work-related microsystems threaten her potential engagement with study through declining sense of self-efficacy. These emotions are supplanted through the relational meaning she ascribes to her peer-related experiences giving rise to psychosocial coping resources and positive emotions that supported her overcome the negative threat. This highlights the inter-connectedness of the emotional worlds of PGT students and suggests that protective factors may reside in unpredictable spaces and as such underlines the need for HEis to be cognisant of this holistic picture.

Zimmer-Gembeck et al. (2018) highlight the importance of flexible access to and use of a variety of coping resources to mitigate against stress-related threats. In Martha's story, her motivation to study is a significant personality variable that provides an additional coping resource. It shapes her sense of controllability, which is a significant mitigating factor during heightened emotion (Smith et al. 1993) and promotes access to problem-focused coping strategies that allow her to maintain her goal-oriented behaviours (Jamieson et al. 2018). High internal motivation informs emotional commitment, which is essential for establishing an academic identity and shaping Martha's approach to relationship building, critical thinking and sense of self (Whannell and Whannell, 2015; Robinson and Glanzer 2016). Drawing from multiple coping resources Martha has overcome varying threats to successfully inculcate to the academic culture; adapting to demands she has maintained a positive goal-oriented direction in her study journey.

Conclusion: embracing the complexity

Within this writing we have sought to unfold our conceptualisation of student experience. Unlike previous approaches that measure student experience in terms of satisfaction, we have presented emotion as a central organising construct of student experience, underpinning the person–environment interactions that occur in and across five eco-systemic facets and directly impacting wellbeing. Through this conceptualisation, we locate the student as an active participant enmeshed within and across a labyrinthine of systems evolving over time and engaged in intra and interpersonal processes that include the dynamic interactions of stress-related appraisals, coping, and emotion responses that influence wellbeing. These interactions are shaped by past and present experiences according to biopsychosocial-cultural forces acting over time and function to shape future experiences.

Through this approach, we adopt a meta-appraisal of the multiple layers of interactions, supports, challenges and intra-personal emotional responses to study student experience in a holistic way; using the phenomenological nature of the lived reality according to the interactions between the focal individual and the interconnected ecologies to inform our understanding. In keeping with Bronfenbrenner's ultimate goal aimed at understanding person–context interactions to inform adaptive ecologies that support development (2005, p. xiv), we argue this revised representation provides direction for exploring, understanding, and responding to student experience in a way that supports enacting practices and contexts to promote preparedness for professional life and actualise the potentials of higher education to support transformative sustainable development. We hope that this model will provide a lens and resource for researchers and those involved in student support and teaching to interpret, understand and respond to the experiences of their students. Furthermore, the risk of not embracing this multifaceted conception of the student experience will limit the efficacy and attunement of higher education strategies and services and in turn inadvertently constrain attainment, retention, and sustainability. Future research could explore how this newly developed conceptualisation of student experience could inform proactive approaches that support positive wellbeing for PGT students.

Disclosure statement

Notes on contributors

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Exploring Wellbeing and Remote Learning Using the Delphi Method: Engaging Teacher Education Students as Co-Producers of Practice

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Abstract

In UK Higher Education (HE), there is a growing awareness that wellbeing is central to student experience. Increasingly, HE agendas are promoting a targeted holistic institutional approach to wellbeing that supports students thrive in and beyond the student journey. This study positions students as experts of the student experience. Through student voice, the study explores teacher education students' experiences as a product of the synergistic effects of wellbeing and eco-systemic factors related to remote learning. In turn, findings feed into programme and practice developments that support positive student wellbeing. A conventional Delphi Method was used for its effectiveness addressing four different conditions: 1) accessing geographically dispersed populations; 2) overcoming unequal power dynamics; 3) supporting structured communication between experts on a topic leading to consensus building and decision making; 4) engaging students as co-producers of practice to support positive wellbeing. Our findings provide new insight into the multiplicity of factors that interact with student wellbeing to benefit, challenge, or threaten student experience and the coping resources teacher education students rely on to maintain their education trajectories. These insights provide valuable understanding informing future teacher education programming and practice.

Key Words: Teacher education, wellbeing, remote learning, delphi method, student experience

Introduction

There is growing awareness in Higher Education (HE) of the central role wellbeing plays in student experience; it is a fundamental pre-requisite for learning and student success (GuildHE, 2018; Houghton & Anderson, 2017) and is widely dependent upon a student's capacity to cope with internal and external demands associated with the highly pressurised student journey (Freire et al., 2020; Author 1, 2020). During the Covid-19 lockdown this awareness has all the more relevance through the swift changes and adaptations to HE programmes, from on-campus taught provision to remote learning (Stanistreet, 2020).

For postgraduate (PGT) students, whose journey is complex and multifaceted (Temple, Callender, Grove & Kersh, 2014), the psychological, emotional, and social health that defines positive wellbeing (WHO, 2014a) is essential for developing the higher order capacities and competencies that define PGT study. Within this population, Professional Graduate Diploma in Education (PGDE) students, who are in pursuit of teacher qualification, face unique challenges through the rigorous two-part structure of their intensive 1-year initial teacher education programme, which demands they satisfy academic and professional practice requirements. Traditionally PGDE students have completed their academic study on-campus, through face-to-face lectures and workshops designed to support them in bridging knowledge acquisition with practical application, and to develop their understanding of the complexities involved in teaching and learning (Edwards, 2012). With Covid-19 restrictions in the autumn term of 2020, academics in one UK university were challenged to transform traditional modes of delivery to remote learning for PGDE students to ensure learning continuity. These actions provoked the research that is reported in this paper including the

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methodological approach, positioning students as experts, capable of providing insight and making judgements about aspects of their experience of remote learning.

The research explored PGDE students' experiences of remote learning through their first 8 weeks of study during the autumn term of 2020. The aim was to activate student voice to better understand and respond to the internal and external study factors associated with remote learning that interconnect with wellbeing and influence student experience. According to Jarvis (2007), students are experts in their own experience and through phenomenological exploration resides opportunity to understand how they learn. The current study adopted a conventional Delphi method approach, recognising the need for expert knowledge gained through the shared understanding of student perspectives, using these to feed into programme level developments (Green, 2014).

A meta-theoretical approach underpins the conceptual framework for the study; drawing from a holism framework, we explore student experience as an entanglement of four intersecting dimensions of the person including, mind, body, culture, and society. We suggest student experience can be understood as the phenomenological representation of person-environment interactions informed by the synergistic effects of wellbeing, emotion processes, and eco-systemic facets of the student journey (Author 1, 2021, p. 5). These ideas will be explored in depth through the next section, and are illustrated in Figure 1, which provides a representation of student experience as the product of these intersecting themes. Within this study, the eco-systemic facets included the various online spaces and at home places within which PGDE students have direct or indirect study-related interactions with people, objects, activities, or semiotics during the first 8 weeks of the student journey (Daniels, Lauder & Porter, 2012).
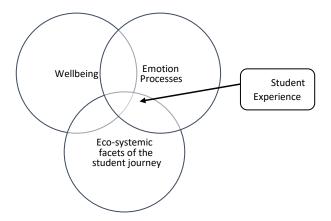
Figure 1. Student Experience: The synergistic relationship between facets of the student journey, emotions, and wellbeing (White, & Ingram, 2021).

This paper presents the methodological approach to gathering the perceptions of students' experiences while engaged in remote learning during their first 8 weeks of academic study and reports the findings relating to their student experience. The study should be of interest to initial teacher education (ITE) educators and higher education programme leaders' sector-wide working on programmes where traditional on-campus teaching has transitioned to online remote learning and where there is interest in developing proactive approaches to promoting positive student wellbeing as a central determinant in student experience.

Theoretical Framework and Literature Review Wellbeing as a determinant in PGDE student experience

Wellbeing is central to health, human functioning, and global sustainability (Grau, Goddard, Hall, Hazelkorn, & Tandon, 2017; WHO, 2014a.). It is a complex and multifaceted concept influenced by biopsychosocial-cultural processes operating across varying contexts and reflecting an individual's perceived capacities to cope with daily life stresses (Dodge, Daly, Huyton & Sanders, 2012; Lazarus, 2006; WHO, 2014a;). Wellbeing is a determinant in flourishing or languishing in life and encapsulates an individual's perceptions of feeling good and functioning well; it impacts capacity for learning, social connectedness, self-efficacy, and motivations (Keyes, 2005; Seligman, 2018). Within this complexity of wellbeing, emotions have an orchestrating role. Through their enactive nature (Maiese, 2014; 2017), they influence the balance between wellbeing, stress and coping, informing stress related appraisals, motivations, enacted behaviours, and subjective experience, which in turn influence the quality of contextual interactions, and ultimately an individual's social, emotional, and psychological health (Smith, Haynes & Lazarus, 1993).

Emotion responses arise during person-environment interactions and reflect how an individual construes an interaction as a benefit, challenge, or threat to wellbeing (Lazarus & Smith 1990). This largely depends upon the individual's perceived capacities for coping which are dependent on bio-ecological factors including, antecedent motivations, self-belief variables, perceived situational demands, resources, and environmental constraints (Lazarus & Folkman, 1984; Lazarus, 2000; 2006). Benefit appraisals support positive wellbeing as they reflect an individual's appraisal of an interaction as goal congruent; challenges infer low risk and reflect an individual's perception that sufficient bio-ecological resources exist to support achieving a desired outcome. Appraisals of threat infer high risk to wellbeing through perceived inability to cope and have negative implications on social, psychological, and emotional functioning (Jamieson, Hangen, Lee & Yeager, 2018). This entanglement of appraisals, emotion responses, and coping shape the relational meaning an individual assigns an experience and are highly variable according to changing perceptions of coping (Lazarus, 2006). They directly impact capacities for learning, including productive working, sense of self, and social connectedness, which in turn inform wellbeing and subjective experience (Lazarus, 2006; Schiffer, 2019).

Through this understanding, wellbeing and emotion can be conceived as central factors in PGDE student experience. Like other PGT students, PGDE students enter study influenced by varied external and internal-to-study stressors including varied knowledge and prior learning, diverse expectations of study, care commitments, parttime work duties, and financial obligations (HESA, 2019; Morgan & Direito, 2016). They also face the added challenges of a 1-year professional programme including, limited time to: transition into study; develop academic and professional identities; and gain learner capacities necessary to satisfy the requirements of PGT academic study and the standards for provisional registration essential for both programme completion and entry to the teaching profession. Their capacity to cope with these stressors has a direct impact on wellbeing and subjective experience through the valence, amplitude, and salience of emotion responses that inform their "felt meaning" (Schiffer, 2019, p. 58). The intensity of this programme paired with the multiplicity of internal and external study factors typical of the PGT student population, compounded by the effects of programme changes during the Covid-19 lockdowns highlight the significance of exploring and understanding student experience through the lens of wellbeing for the PGDE population.

This study focused on student experiences of remote learning during the first 8 weeks of study, acknowledging this is a crucial aspect of the PGT student journey (Matheson & Sutcliffe, 2018). For 1-year PGDE students, it is foundational to their transition and enculturation to study, informing academic identities that underpin their academic success (Gale & Parker, 2014).

Wellbeing in higher education

The role of wellbeing in student success is well understood in Higher Education (HE), taking a dominant place on agendas in recent years (Feldman & Newman, 2021; GuildHE, 2018). Sector-wide, campaigns sign-post students to seek support during periods of threatened wellbeing, relegating responsibility to student services (Houghton & Anderson, 2017). Critics, however, suggest this approach is inadequate, and classify it as a deficit model that is both reactionary and atomistic, serving only to address short-term needs of students requiring support during periods of mental health crisis (Feldman & Newman, 2021; GuildHe, 2018). They argue the need for a proactive, preventative, and holistic approach that coordinates all aspects of institutional life with the potential to foster positive wellbeing for all students in study and beyond (de Pury & Dicks, 2020; Feldman & Newman, 2021).

Within this agenda, clear connections to sustainability are developing; proponents argue, a holistic approach fulfils the higher goals of HE to achieve transformative learning. Transformative learning promotes creative, critical, and reflective thinking, positive social interactions, and informs positive learner wellbeing through a developing sense of self-actualisation (Mezirow, 2000) with broader implications through students' ecosystemic connections with family, community, and future workplace settings (Grua et al., 2017; Steuer, Marks & Murphy, 2008). Through institutional connectedness student wellbeing can be targeted for short-term needs during periods of high stress and in a sustained way to promote improved practices that increase students' capacity for coping and potential for thriving throughout their student journey and beyond (GuildHE, 2018). This is a necessity for PGDE students who will enter a profession that reports high stress levels and increasing attrition rates (Lindqvist, Weurlander, Wernerson & Thornberg, 2017; Ravalier & Walsh, 2017). Teacher retention and learner success depend on individual, collective, and organisational wellbeing necessary to achieve effective instructional practices, productivity and creativity, social connectedness, and organisational goal attainment (de Pury & Dicks, 2020; Soini, Pyhältö & Pietarinen, 2010).

Teaching and learning have a role in this holistic approach, orienting the design and delivery of curricular content, pedagogy, and learning environments to support transformative learning and to address the academic and study experience issues that have historically threatened student wellbeing, including sense of belonging, fear of failure, study-related anxiety, and daily life demands (de Pury & Dicks, 2020; Houghton & Anderson, 2017; Jindal-Snape & Rienties, 2016). De Pury & Dicks (2020) suggest the recent transition to digital learning offers good potential for developing innovative, equitable practices in teaching and learning that support positive wellbeing. They highlight the importance of exploring biopsychosocial-cultural dimensions of wellbeing as a part of this process and emphasise the need for the collaborative involvement of students as co-producers of practices (dePury & Dicks, 2020).

This understanding informed the methodology of the current study, which employed a conventional Delphi method to engage students as experts in exploring their academic, study, and remote learning experiences. Findings in turn, have informed programme development including the design of teaching and learning environments; pedagogy; and curriculum delivery to support positive wellbeing.

Two questions guided the research:

1. What are students' perceptions of their experiences of remote learning in the first 8 weeks of study?
2. How can student voice be used to enhance practices that contribute to improved student experience?

Methodology Context

The study took place in a School of Education in a UK University where, like many programmes nation-wide, the onset of Covid-19 meant the transition from faceto-face teaching to online remote learning. The goal of the study was to engage PGDE students as expert purveyors of their student journey to help inform our understanding of, and programme level response to their academic, study, and remote learning experiences to support their positive wellbeing.

Study design

The study is underpinned by principles of pragmatism, which seeks to bridge research with practice through informed decision making (Creswell, 2014); a conventional Delphi design was chosen for its suitability to studying previously underexplored topics that arise in relation to rapidly changing circumstances (Brady, 2015). A conventional Delphi method engages a panel of experts in a consensus building process; it uses an iterative approach to data collection where responses are aggregated and shared leading to final judgements that can be used to inform decision making (Brady, 2015; Hasson, Keeney & McKenna, 2000). The Delphi design supports anonymous, structured communication, data collection and analysis of judgements across large groups who are geographically dispersed (Franklin & Hart, 2007) befitting the circumstances introduced during the Covid-19 pandemic. The structure of the Delphi method pre-empts any possible power imbalances that arise through social, personal, and professional dynamics to increase the likelihood of honest, open opinions in response to questions (Vogel et al., 2019). The unique features that define the Delphi method make it a useful tool in the design of learning experiences and curricular development providing opportunity for participants to make judgements according to their learning needs and interests (Green, 2014).

In this study, participants participated in a 3-round consensus building process, using anonymous, structured communication to make judgements about the most significant factors influencing their student experiences in the first 8 weeks of remote study. Using the Delphi method, it was possible to move beyond a tokenistic inclusion of student voice by positioning students as experts, informing us about aspects of their experience, thereby becoming co-producers of practices that support their positive wellbeing, and embracing a *'No decision about us, without us'* mindset (dePury & Dicks, 2020, p. 23). Figure 1 provides an illustrative overview of the 3-round Delphi process used to support data collection in this study.

Round 1: Demographic data; Wellbeing data (WEMWBS): Open Questions to solicit ideas related to three areas of student experience: remote learning; academic experiences; study experiences.

Aggregated responses shared w/ panel members.

Round 2: Structured questionnaire, closed and open questions according to key themes that emerge from round 1 data. The purpose in round 2 is to begin to solicit judgements. Consensus was defined as >70% agreeing or disagreeing with a judgement.

Aggregated responses shared w/ panel members.

Round 3: A structured, closed-question questionnaire, seeking opportunity to consolidate judgements.

Figure 1. An illustrative representation of the three round conventional Delphi design

Dimitrijević, Simic, Radonjic & Kostic-Ljubisavljevic, (2012) suggest four criteria that define a 'Delphi Method'. These include, anonymity, iteration, controlled feedback, and the collation of data that has undergone statistical analysis (p. 402). The following section outlines our approach to data collection and analysis according to these four criteria.

Recruitment, data collection and analysis

Panel approach

The study was introduced to 2019 PGDE students using a 15-minute synchronous online presentation introducing the purpose and design of the research. Recruitment included university web-based internal email communications inviting students to join the study. From the initial recruitment, 80 students consented to participate in round 1, which is in line with previous research suggesting panel membership as low as three and as high as 100 (Ogbeifun, Agwa-Ejon, Mbohwa & Pretorius, 2016). These 80 students became the Round 1 panel of experts and for each subsequent round a new invitation was emailed inviting panellists to join the next round. By the end of the three-month study, 24 of 80 panellists remained. All data were handled according to UK data protection requirements.

Round 1 data collection included demographic and wellbeing information. Delphi techniques rely on diversity of expertise and backgrounds to inform the consensus building process (Green, 2014; Linstone & Turoff, 1975). Within this study, the ecosystemic and phenomenological nature of the student experience provided a range of participant expertise, and we used the collection of demographic information as a baseline for confirming the diversity of participant characteristics (Table 1). Wellbeing measures were collected using the Warwick-Edinburgh Mental Wellbeing scale (WEMWBS) (Taggart, Stewart-Brown & Parkinson, 2015). This 14-item, 5-point Likert scale measures social, eudemonic, and hedonic aspects of wellbeing in a population (Tennant et al., 2007). In this study, individual wellbeing questions were used to support exploring and discussing group wellbeing (Taggart et al., 2015).

Table 1.
Participant Characteristics

Question	Options	Participants	Percentages
Where are you from?	Scotland	76	95%
	Rest of UK	3	3.8%
	EU	1	1.3%
	International (non- EU)		
Gender	Female	67	83.8%
	Male	13	16.3%
	Other		
Age	18-24	21	26.6%
	25-30	20	25.3%
	31-39	18	22.8%
	40-49	15	19%
	50-59	5	6.3%
	60+	0	-
Gap between current and previous study (years)	0-1	24	30%
	2-4	17	21.3
	5-9	18	22.5
	10+	21	26.3
Dependents?	Yes	31	38.8%
	No	49	61.3%

Round 1 Delphi questions provided participants a series of nine open questions and three free-text responses exploring their experiences across three domains of interest: remote learning, academics, and study experiences (Table 2).

Table 2.

Domains of Interest Presented to Panel Experts in Round 1 Data Collection

Remote Learning	Academic Experiences	Study Experiences
What you do/don't Enjoy	Digital Tools	Transition
Challenges	The Virtual Learning Space	Strategies used to address challenges
Motivation	Teaching Strategies	Digital Tools
Free Text Response	Free Text Response	Free Text Response

The goal in this initial round was to solicit ideas from participants which were collated and analysed thematically (Braun & Clark, 2006) to create a structured quantitative survey representing the shared ideas and to initiate the consensus building process (Dimitrijević et al., 2012). Following the Round 1 analysis, a summary of the Round 1 findings was shared with panel members alongside the quantitative survey for Round 2. The sharing of findings supports the consensus building process by providing panel members the opportunity to review group responses, which may inform new thinking for future rounds (Linstone & Turoff, 1975).

In the Round 2 quantitative survey, participants were asked to rank order 154 statements across 12 sub-domains, nested within the three domains of interest (Table 3). An open question exploring the theme, *feedback*, was also included in Round 2. This theme emerged as a category in the free text responses in round 1 analysis and an open question was needed in Round 2 to establish a greater depth of understanding of students' experiences. Exploring new ideas that emerge through each round is an approach supported by the Delphi Design (Linstone & Turnoff, 1975).

Quantitative data collected from round 2 underwent statistical analysis to determine group consensus. Consensus was defined at ≥70% of participants agreeing or disagreeing with a judgement; any statements receiving <30% agreement was removed from the round 3 iteration, these are two conditions which are in line with previous Delphi studies (Ogbeifun et al., 2016; Vogal et al., 2019). Any questions meeting the consensus value were removed from the round 3 survey. Using the round 2 analysis of feedback, new closed questions soliciting participant judgements related to this topic were added to the round 3 survey. In Round 3, the revised survey was sent to participants alongside the summary of findings from Round 2. This was the final iteration and provided panellists the opportunity to establish consensus on the remaining questions (Turoff & Linstone, 1975). Table 3 provides a summary of the Delphi statements used in each round and is organised according to the 12 sub-domains nested within the three domains of interest.

Table 3.

Summary of Grouped statements by Domain and Sub-Domains

Round	Group Size	Domains	Sub- Domains/ Corresponding Statements		Consensus Achieved (CA)
1	80	Remote Learning Experiences	-	4	N/A -Round 1 analysis used to create

		Academic Experiences	-	4	quantitative survey to elicit
		Study Experience	-	4	participant judgements
2	27	Remote Learning Experiences	Health Challenges	8	CA
			Technology Challenges	14	CA
			Study Challenges	17	No Consensus *11 statements less than 30% agreement.
			Emotion Challenges	9	CA
			Likes	20	No Consensus *15 statements less than 30% agreement
		Academic Experiences	Virtual Learning Environment	14	CA
			Desired Teaching and Learning (T&L) Strategies	15	No Consensus *7 statements less than 30% agreement
			Effectively Used T&L Strategies	15**	**Had to be re-asked in round 3
			*Added one open question on feedback		
		Study Experience	Coping	5	CA
			Motivations (positive impact)	8	CA
			Motivations (negative impact)	14	No consensus *9 statements less than 30% agreement
			Study Supports	15	CA
3	24	Remote Learning Experiences	Study Challenges	6	CA
			Likes	5	CA
		Academic Experiences	Desired T&L Strategies	8	No Consensus
			Effectively Used T&L Strategies	15	CA
			Type of Feedback Most Valued	10	CA
			Use of Feedback	10	CA
		Study Experience	Motivations (negative impact)	5	CA

Note. *statements scoring less than 30% agreement were omitted from the round 3 survey.

(CA) Consensus was achieved when 70% or more group agreement was achieved in the ranking of statements. When a minimum of 1 statement for each subdomain achieved consensus, the domain was removed from the next survey round.

** Effectively Used Teaching Strategies had to be re-inserted into round 3 as a result of an error in round 2 wording for one statement.

The next section reports the key findings and insights into the relationship between wellbeing and students' experiences of remote learning.

Findings and Discussion PGDE student wellbeing

Through its close relationship with learning and emotion (Boekaerts, 1993; Lazarus, 2006), wellbeing is conceptualised in this study as a central factor in student experience. Wellbeing measures were collected and analysed using the WEMBMS scale and user guide (Taggart et al., 2015). Scaled scores were summed for each participant, yielding a result ranging from a minimum score of 14 to a maximum score of 70. Categorical analysis was used to identify low (14-42), average (43-59) and high (60-70) mental wellbeing scores (Table 4).

Table 4.

Summed WEMWBS Scores showing low, average, high wellbeing across the participant population

Levels of Wellbeing (Using WEMWBS Scores)	Student numbers	Percentage of participant population
Low wellbeing	23	29%
Average wellbeing	54	67%
High (60-70)	3	4%

Findings are largely positive, indicating 71% of the participant group were experiencing average to high wellbeing at the time of data collection, inferring the availability of biopsychosocial capacities necessary for engagement with the higher order learning requirements which define PGT study (Jamieson et al., 2018; QAA, 2018). Alternatively, 29% of the student group indicate experiencing low wellbeing at the time of data collection warranting a more granular level of analysis. This included a calculation of mean group wellbeing and a question-by-question analysis of the wellbeing attributes (Taggart et al., 2015). Group mean wellbeing scores were compared to 2019 national wellbeing scores for adults aged 16-64 years in Scotland. Findings are positive, with mean group wellbeing scores of 46.34 (s=7.9) aligning with mean national wellbeing scores of 49.1 (Knudson et al., 2020).

Descriptive statistics were used to support a greater depth of exploration involving question by question analysis (Table 5). Mean scores less than 3 and greater than 3.7 have been highlighted to identify least favourable and most favourable responses. Group percentages for least favourable responses, 'none of the time', or 'rarely' are shown following each item, *having energy to spare* (40%), *feeling relaxed* (35%), and *feeling confident* (33%). In contrast, favourable responses 'often' or 'all of the time' included, *feeling interested in other people* (73%) and *feeling loved* (58%). Interestingly, across all items, 'all of the time' was the most frequent response for 'feeling loved' but it also had the greatest s-value indicating it had the widest range in participant responses.

Table 5.

Descriptive statistics for wellbeing scores

	MEAN	STD DEV.	MODE	MEDIAN
I've been feeling optimistic about the future	3.54	0.76	4	4
I've been feeling useful	3.05	0.91	3	3
I've been feeling relaxed	**2.8**	0.75	3	3

I've been feeling interested in other people	**3.81**	0.82	4	4
I've had energy to spare	**2.71**	0.92	3	3
I've been dealing with problems well	3.41	0.72	4	3
I've been thinking clearly	3.49	0.65	4	4
I've been feeling good about myself	3.14	0.96	3	3
I've been feeling close to other people	3.0	1.08	3	3
I've been feeling confident	**2.9**	0.92	3	3
I've been able to make up my own mind about things	3.7	0.83	4	4
I've been feeling loved	**3.74**	**1.14**	**5**	4
I've been interested in new things	3.64	0.94	4	4
I've been feeling cheerful	3.43	0.77	4	4

Feeling interested in new people is a positive finding through its potential contribution to wellbeing and learning. It suggests participants are open to building positive relationships, which Seligman (2018) highlights as a foundation of wellbeing, providing a sense of connectedness and belonging. Connectedness and belonging are factors that support student engagement, motivation, and identity which in turn foster an orientation to learning (Aked, Marks, Cordon & Thompson, 2008; Fisher et al., 2019). *Feeling loved* is another positive finding. More impactful than the broad social relationships that might developing within a cohort, relationships based on feeling loved provide stability, security, a source of encouragement and coping (Aked et al., 2008). It is possible to reason, feeling loved provides students the coping resources necessary to mitigate against stresses that arise because of internal and external to study demands, supporting positive wellbeing and learning oriented goals.

The findings that indicate over one third of the participant group *lack energy and confidence*, and rarely or never feel relaxed are concerning. Wellbeing relies on capacities to cope with daily life stresses (WHO, 2014a). Through coping, the social, emotional, and cognitive processes that inform wellbeing can be maintained, allowing an individual to sustain their goal directed behaviours (Dodge et al. 2012). Persistent inability to relax or a lack of spare energy create pressures and heightened stress that potentially interfere with coping (Anisman, 2014). Average stress for university students outweighs stresses in the general population (Gustems-Carnicer, Calderón & Calderón-Garrido, 2019), which when paired with our findings, raises questions about PGDE students' capacities for coping with the internal and external to study demands that define their student journey. Adding to this, Briggs (2014) identifies academic confidence as a predictor of academic success and a contributing factor in building a sense of self-efficacy. Self-efficacy informs student coping through its positive influence on identity, persistence, motivation, and effort (Cisco, 2020; Freire et al., 2020) highlighting *a lack of confidence* as a potential threat to student experience.

Responses to the Delphi Exercise

Analysis of Delphi data provided valuable insight into internal and external study factors associated with three domains of interest: remote learning, academic experiences, study experiences. Across the three rounds, consensus was achieved for 11 of 12 sub-domains (Table 6). No consensus was agreed for Preferred Teaching and Learning Strategies. In this section we explore these findings and their interactions with attributes of wellbeing.

Table 6.

Summary of Statements Achieving Consensus

Domains	Sub-Domains	Consensus	(% agreement)
Remote Learning Experiences	Health Challenges	• Poor concentration	74
	Technology Challenges	• misuse of the chatbox	78
		• inconsistent organization of the VLE area	70
	Study Challenges	• Difficulty gauging progress due to lack of feedback that would normally occur informally through social interaction with peers or lecturers	82
		• Difficulty learning 'practical' subjects (e.g. Art, PE, Design, Dance)	72
	Emotion Challenges	• irritated by too much irrelevant chat in the chat box	70
	Likes	• save time and money associated with travel	95
		• Recordings support revisiting materials and flexible viewing for self-paced study	91
		• No commute time supports longer engagement with study materials	77
Academic Experiences	Virtual Learning Environment	• Difficult to keep track of what has been done and what still needs to be done	70
		• Lecturers using different methods of communication (email/announcement), which makes it really difficult to go back to find the communication at a later date	70
	Preferred Teaching and Learning (T&L) Strategies	• No consensus achieved	
	Effectively Used of T&L Strategies	• Lecturer's Presence	86
		• 'Wee' groups	77
		• Recorded lectures	77

		• YouTube clips	73
	Most Preferred Types of Feedback	• Formal feedback on assignments that provides clear next steps	86
		• Formal feedback on assignments linked to defined criterion	72
	Most used Feedback	• Formal feedback on assignments linked to defined criterion	90
		• Formal feedback on assignments that provides clear next steps	76
		• Informal self-feedback used to reflect on activities, goals, and next steps	76
Study Experiences	Coping	• Support of family and peers most important sources of coping	71
		• University services scored least important source of coping	75
	Motivations (positive impact)	• No Travel - more energy, less tired, no anxiety, more time to engage with materials	74
		• Recorded lectures support flexible learning, self-pacing and opportunity to review materials	70
	Motivations (negative impact)	• Dwindling motivation - high at the start and has waned through the monotony of sitting at the computer all day	91
		• Back to back live lectures; lack of active learning opportunities: 'I start to zone-out.'	91
		• Mental Health: too much screen time; tiresome routines; migraines	82
	Study Supports	• Attending every session	88
		• If confused about anything, discuss	

privately with tutor group before emailing a lecturer	85
• When other students are happy to share ideas	81
• Revisiting lectures of areas I am unsure of	77
• Seeing things with more clarity after a day's break	70

Remote learning and wellbeing

The complexity of remote learning introduced during the Covid-19 lockdowns in the Autumn term of 2020 have challenged UK universities to adapt and adopt new and innovative practices that support continuity of learning (Stanistreet, 2020). Findings from this study confirm the PGDE student experience of remote learning is influenced by a host of internal to study and external to study factors interacting with student wellbeing to benefit, challenge, and threaten the student journey. Such findings provide valuable insights that can be used to shape programme developments that support an inclusive and sustainable approach to teaching and learning in HE, meeting the transformative goals of the UK Universities' strategic plan 2018-2023 to promote lifelong learning (UK Universities, n.d.).

Benefits, challenges, and threats to remote learning

Benefits include the *flexible nature* of remote learning, which achieved 70% consensus for its positive impact on motivation. Motivational orientation is an important factor in wellbeing, supporting capacities to cope with and overcome challenges to maintain goal directed behaviours (Jamieson et al., 2018). Adding to this, 91% agreed *opportunity to review learning materials* and *self-pacing* were two most liked aspects of study that flexible learning made possible. This flexibility supports students' autonomy and agency, which Houghton & Anderson (2017) suggest is important to wellbeing and learning. Through autonomy and agency students develop their sense of competence, confidence, and academic identity, which in turn inform immersive engagement, transformative learning, and wellbeing through achieving a sense of self-actualisation (Mezirow, 2000; Deci & Ryan, 2008). Wellbeing and transformative learning are the goals of higher education recognising their interconnectedness with wider society, environment, and economy (Grua et al., 2017; Steuer et al., 2008), making flexible pedagogy an important feature in curriculum design.

Another benefit, achieving 95% agreement, *was the time and cost savings* associated with remote learning. Financial burden and time pressure are primary sources of stress for pre-service teachers which can threaten attainment and retention (GustemsCarnicer et al., 2019; Jindal-Snape & Rienties, 2016). The flexible nature of remote learning mitigates against these traditional sources of stress to support wellbeing and a positive student experience.

Challenges of remote learning related to health, emotions, the use of technology, and study. Of these, the highest level of agreement, 82%, related to study challenges, *difficulty gauging progress due to lack of feedback that would normally occur informally through social interaction with peers or lecturers.* Paquette and Reig (2016) highlight the importance of appropriate feedback for mitigating student stress associated with fear of failure. While the micro-environment of face-to-face settings supports spontaneous and natural feedback (Tobbell & O'Donnell, 2013), the same cannot be said of online learning environments, which instead require purposefully planned opportunities (Fiock, 2020; Steele & Holbeck, 2018). Fiock (2020) identifies the importance of social presence and teacher presence to support discourse and personalisation for informal feedback opportunities (Fiock, 2020).

From our findings, 86% agreed *lecturer presence* was the most effective teaching and learning strategy used, suggesting programme staff are using teacher presence effectively, and raising programme level questions about how to further improve our effective discourse to ensure the inclusion of informal feedback opportunities.

Feedback is a common theme in student experience surveys (Temple et al., 2014) and our findings suggest it is a priority as part of PGDE students' academic experience during remote learning. *Assignment feedback offering clear next steps* was the most preferred form of feedback achieving 86% agreement and 72% of participants agreed *feedback on assignments linked clearly to defined criterion* as a preference. Quality feedback contributes to optimal learning, informing goal setting, progress, and goal attainment which have direct links to student experience and positive wellbeing through their relationship with motivation, sense of satisfaction, feelings of competency, and self-efficacy (Houghton & Anderson, 2017; QAA, 2018). Self-efficacy is a primary determinant in student engagement, persistence, and academic success (Freire et al., 2020, p. 2) making quality feedback a crucial factor in online teaching and learning environments.

Academic and study experiences were challenged in various ways through students' use of, and engagement with technology. Participants agreed that misuse of the chatbox (78%) was one of the greatest technology challenges, and *70% agreed the difficulty navigating, communicating, and keeping track of tasks and assignments* using the virtual learning platform most negatively impacted their academic experience. Pedagogical approaches, including direct instruction, that build taught postgraduate student confidence navigating technology support improved engagement and positive learning trajectories, highlighting their importance as a core practice of effective teaching in higher education (QAA 2018; Tobbell & O'Donnell, 2013).

Findings indicate threats of remote learning, including the repeated use of technology and *the monotony of sitting at a computer all day,* had negative implications to student motivation in multiple ways; 82% of participants indicated tiresome routines and *migraines threaten mental health* and 91% identified *back-to-back lectures without activity* as demotivating factors. Aked et al. (2008) acknowledge the deleterious effects that repetitive approaches can have on wellbeing, resulting in their reduced potency and highlighting the importance of a variety of approaches to support teaching and learning. These findings may offer insight into one aspect of academic experience that did not achieve consensus. Participants could not establish agreement about a *preferred teaching and learning strategy*, suggesting a range and variety of approaches support positive experiences.

Coping strategies are essential to wellbeing and student experience (Author 1, 2020; Lazarus, 2006). They provide an individual the capacities to overcome challenges and threats thereby enabling engagement with learning and sustained goal-directed behaviours (Freire et al., 2020). Our findings have provided insight into the most and least favourable coping strategies that participants rely upon and highlight interesting points of comparison with attributes of wellbeing. Wellbeing data favoured attributes including 'feeling loved' and 'interested in meeting new people'. Delphi data provided insight into these attributes of wellbeing as important coping strategies. *Family and peer support* were highlighted as the most important source of coping, achieving 71% consensus. Strong social relationships found amongst family or friends are supportive, nurturing and encouraging, and inform capacity to persist; while broad relationships such as those within a student group, provide feelings of connectedness and belonging, which inform individual sense of identity with the social, material, and relational surroundings (Aked et al., 2008; Miller, 2003); strong sense of identity supports coping and sustained wellbeing through its positive influence on motivation, engagement, resilience, and academic performance (Fisher et al., 2019; Whannel & Whannel, 2015).

Interestingly, 75% consensus revealed the least important source of coping for participants was university supports. Given the host of research that highlights the importance of university services in

supporting student experience (Ciobuno, 2013; dePury & Dicks, 2020; Feldman, 2021) these findings raise questions and highlight new lines for inquiry for future study.

Limitations of the Delphi Method

We note some limitations of the Delphi method that inform our study. The Delphi method lacks universally agreed standards for defining consensus and panel sizes which would otherwise strengthen its efficacy (Fink-Hafner, 2019). Diversity of participant expertise is a defining feature of the Delphi design and a lack of diverse representation in the participant panel limits the generalisability of findings (Brady, 2015). Within our study, we used demographic data as a way of ensuring a diverse representation of experiences from our participant population, acknowledging the eco-systemic and phenomenological nature of the student experience would provide a range of participant expertise. However, the singularity of participant representation from one programme limits the generalisability of our findings. Fink-Hafner (2019) suggests a further limitation of the design is the potential for fragmented information arising when a consensus cannot be reached. This was the case in this study, where participants did not find a consensus about preferred teaching and learning strategies and the study design did not support a depth of engagement for exploring why this was the case.

The Delphi design is time consuming and therefore prone to participant drop-out (Fink-Hafner, 2019). Attrition rates between round 1 and round 2 were a significant factor in our study. Unsolicited communications from participants suggest two potential explanations; the timing of round 2 was a contributing factor, coming just before a major assignment submission and following a professional practice experience, which can be a source of stress for students limiting their capacity for coping with extraneous activities (Paquette & Reig, 2016).

Conclusion

The Covid-19 crisis has emphasised the importance of proactive measures in higher education to support wellbeing, acknowledging the central role wellbeing has in learning and student success. Increasingly, HE agendas are promoting a targeted holistic institutional approach to wellbeing to support the student journey and to develop capacities for coping, thereby increasing their potential for thriving in and beyond study (GuildHE, 2018; Feldman & Newman, 2021). This is important for PGDE students whose stress in study is likely to recur in the professional context (Lindqvist et al., 2017). A targeted approach to wellbeing that supports transformative learning experiences for teacher education students may have the potential to influence teacher retention and learner success (Houghton & Anderson, 2017; Soini et al., 2010).

In this study we engaged participants as co-producers of practices using a conventional Delphi method to explore and better understand PGDE student experiences of remote learning in the first 8 weeks of study. In turn, we are using findings to feed into programme level developments that support wellbeing. We explored attributes of wellbeing and environmental factors related to remote learning and propose their synergistic effects inform student experience. Our findings highlight concerning attributes of wellbeing, including low confidence, lack of energy, and an inability to relax. They also indicate positive attributes, including interest in meeting new people and feeling loved. An exploration of remote learning experiences reveals eco-systemic factors that benefit, challenge, and threaten student experience. These include the flexible nature of remote learning; ability to navigate technology; feedback; time and cost savings; mental and emotional demands. Findings suggest participants rely most on family and peer support for coping during periods of high demands.

Through an understanding of the synergistic effects of wellbeing with eco-systemic factors resides the potential to identify improved approaches to practice that mitigate against unnecessary stress while maximizing coping resources and implementing an academically rigorous programme.

An illustration of this, and in keeping with the purpose of the conventional Delphi method to inform decision making, the following programme developments have been informed by our findings:

- Re-organization of the VLE (improve navigation)
- A blended approach to programming (time and cost savings; build relationships)
- Recorded inputs (flexible access)
- Wellbeing resources (relaxation strategies; screen breaks)

This study supports current HE agendas seeking a holistic approach to wellbeing; it identifies a role for teaching and learning through curricular design, online environment, and delivery and in this process has identified how students can act as coproducers of their learning environment. While acknowledging the bespoke nature of student experience, this study has demonstrated how student voice can be used to identify a consensus that supports addressing the key issues that inform the student journey. In line with current HE goals and wider sustainability agendas, this approach supports transformative learning characterized by the opportunity to engage in critical reflection, shared knowledge exchange, and self-examination from which arises the opportunity to explore new ways of thinking, acting, and interacting within the learning environment (Mezirow, 2000).

Our hope is these findings will contribute to higher education discussions sector wide, shaping teacher education programme developments and practices that support an inclusive and sustainable approach to teaching and learning in HE, meeting the transformative goals of the UK Universities strategic plan 2018-2023 to promote lifelong learning (UK Universities, n.d.).

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Reconceptualising postgraduate taught student experience through the lens of emotions and well-being: Moving from explanatory methodology to revelatory

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A R T I C L E I N F O	A B S T R A C T
Keywords: Wellbeing, taught postgraduate Student experience, multi-level qualitative analysis, emotion	This study introduces a methodological approach for exploring taught postgraduate (PGT) student experience as a relationship with emotion and wellbeing. We examine the anatomy of PGT student emotions at one UK university and explore their functional and consequential role in student experience. Findings suggest PGT student experience is defined by a complex array of emotions that interact closely with appraisal, motivation, and behaviour. They have deleterious or beneficial impact on core dimensions of learning and wellbeing including engagement, cognitive flexibility, and social connectedness. Our methodological approach provides an avenue for exploring this complexity through a multi-level and revelatory examination of emotions, from which it is possible to develop proactive approaches to student wellbeing through improved emotion awareness, competencies, and control.

Introduction

A growing body of empirical and theoretical research focuses attention on the importance of student wellbeing in UK Higher Education (HE) acknowledging it as a primary determinant in student experience, informing attainment, retention, and employability (dePury & Dicks, 2020; Feldman, 2021; GuildHE, 2018; Houghton & Anderson, 2017; Streuer, Marks & Murphy, 2008). Sector-wide, institutional initiatives reflect this focus, introducing holistic approaches to addressing the hedonic and eudemonic aspects of wellbeing through system-wide actions aimed at supporting learning and student success (Feldman & Newman, 2021; GuildHE, 2018; Pollard et al., 2021). Current policy and practice directives address safeguarding, mitigating circumstances, and return to study; while university support services campaign to promote wellbeing awareness, encouraging students to seek support during periods of heightened stress; and learning analytics are being used to inform positive teaching and learning experiences (Feldman, 2021; Herodotou et al., 2019; Houghton & Anderson, 2017; Pollard et al., 2021).

These actions are a positive step for HE toward achieving the UK Universities 2018–2023 strategic goal of maximizing their positive impact for students and are a welcome driver for supporting postgraduate taught (PGT) students who encounter a host of internal and external study stresses along their complex and multifaceted student journey (White & Ingram, 2021). This is a student group defined by cultural variability and multiple identities shaped through their pluralistic involvement with family, community, and workplace (White and Ingram, 2021). The traditional perception that a 'one size fits all' approach could be adopted to support this student group is long out-dated (Morgan & Direito, 2016p.18). The wellbeing of PGT students depends upon their capacity to cope with the myriad of

stressors they encounter through the multiple identities that define their various memberships, implicating their engagement with the cognitive, affective, and motivational dimensions of learning (Boekhaerts, 1993; Dirkx, 2009; Seligman, 2018). These dimensions include decision making, sense of self, relationships, autonomous working, and feelings of purpose and satisfaction. They set the conditions necessary for the deep learning that defines PGT study (Diener et al., 2010; Dirkx, 2009; QAA, 2018) and promote the development of the higher order capacities and competencies set out in

UK Universities strategic goals (2018–2023) to promote growth and transformation, including creative, critical, innovative, cooperative, and reflexive thinking (Universities, 2018).

However, proponents of this holistic movement argue current approaches to student experience are deficient through their reactionary and reductionist orientation (Feldman & Newman, 2021; GuildHE, 2018; Razak et al., 2017) arrived at using measures of satisfaction. To achieve their fullest potential, they argue, requires a paradigm shift that adopts both proactive and preventative approaches to student wellbeing. *Education for Sustainable Development* (AdvanceHE, & QAA 2021) elucidates one direction for action, introducing emotion competencies as a route toward achieving this shift, citing the promotion of student self-awareness as an avenue promoting self-agency, sense of responsibility and effective decision-making with implications for wellbeing. This idea is echoed in medical research where emotional regulation and self-control have been identified as key sources of resilience that function to counter the negative impact of stress on wellbeing (Harvanek et al., 2021).

This emergent recognition informs the research reported in this paper through which we present three key strands that provide an original and impactful contribution to this area of inquiry.

1 We explore and synthesis emotion literature, examining the interplay between cognitive, affective, motivational, behavioural, and subjective emotion components to develop a holistic understanding of emotion as a driver in student experience and from which we establish a framework for understanding the appraisal dimensions that orchestrate the emotion process.
2 We introduce a replicable, multi-layer qualitative analysis process to examine the anatomy of PGT emotion and use the literature informed framework to examine the functional and consequential role of emotion in PGT student experience.
3 We present a selection of key findings from a three-year cross-sectional study highlighting the role of emotion in the multiple layers of interactions that define PGT student experience.

We propose this holistic approach offers the potential to move beyond student testimonies as descriptions of subjective experience to one which illuminates why students may experience their learning in the way they do and crucially the nature, intensity, duration, and visibility of such responses. Our methodological approach can be replicated and used more widely by the higher education community to shift the examination of student experience feedback from one which is descriptive and confirmatory to one which is multi-dimensional and revelatory. Through this revised understanding, we propose the opportunity resides to develop proactive approaches to student wellbeing founded on emotion awareness, competencies, and control.

Our findings have relevance within the higher education sector, contributing to the insights, discussions, and practices relating student experience and wellbeing. Using our integrated framework, we move beyond reacting to PGT student experience according to satisfaction measures (Leman, 2021) to identifying the underpinning emotion processes that inform student satisfaction and shape their experience. We propose our methodological approach addresses the call for a paradigm shift in approaches to student wellbeing and will contribute to sector wide discussions seeking proactive measures that support positive student wellbeing with potential to fulfil the ambitions of HE and the wider calls of *Education for Sustainable Develop* (Advance HE-QAA, 2021).

This research should be of interest to institutional leaders, policy makers, educators, and researchers committed to achieving the transformative goals of HE through moving beyond current reactionary approaches that have students as passive participants in their experiences, to proactive approaches that support student agency through improved emotion competencies.

In the next section we elaborate on these ideas, exploring the complexity of emotion, its relationship to wellbeing and PGT student experience before presenting the methodological approach undertaken

and reporting our findings relating to the relationship between emotion, wellbeing, and student experience.

Understanding emotion as a central driver in PGT student experience

2.1. Theoretical framework

Holism (Lazarus, 2000; Smuts, 1926) provides a useful theoretical framework for exploring emotion as a driving influence informing wellbeing and PGT student experience (Ingram & White, 2020; White & Ingram, 2021). Through holism we conceive emotion as an ongoing and recursive multi-component process involving multiple intersecting and integrated biopsychosocial cultural systems harnessed together and functioning to support individual wellbeing (Parkinson, 1996; Scherer & Ekman, 2014).

The complexity of emotion can be easily overlooked through its expressive and experienced nature (Izard, 2011; Scherer, 2005). Most people view emotion as a bodily representation, readily described as an expression seen on the face, heard in the voice, reflected in the actions of others, or experienced as a felt meaning (Parrot, 2001; Meuleman et al., 2019). Arguably, within HE this view of emotion has had prominence through the annual surveys that seek to capture student experience through measures of satisfaction (Leman, 2021). Such measures represent *what* students' feel, from which universities derive a degree of understanding that can be used to inform programme and institution developments (Leman, 2021). As an example, 2021 PTES data indicates PGT students felt isolated during their studies. They missed class discussions and the opportunity to develop connections with staff (Leman, 2021). This is relevant information that may shape future programme enhancement with the goal of improving how students feel about their experiences. However, its value in fully understanding student experience and in activating the student as an agent in their experience is limited because it represents only one component of a multicomponent emotion process. Knowing students' feelings does not convey any depth of understanding as to *why* students feel this way and the functional or consequential implications for those feelings. As a result, programme and institutional leaders can only react or respond to it, and students remain passive conveyors of information. A measure of satisfaction provides limited evidence of the cognitive underpinnings that have given rise to the reported experience; the implications for physiological response, motivation, and behaviour, which keeps this measure of student experience inherently reactionary and limited in scope. We propose a study of PGT student emotion as a multicomponent process provides the potential to address this gap in understanding with the scope to introduce new insights for building emotional awareness and competencies that promote positive wellbeing through improved student agency.

To achieve this, the bodily-expressive dimension (subjective component) provides a starting point for our research. It reflects the coordinated changes in the other emotion components; conveys a sense of the type and intensity of emotion arousal, and reveals *what* an individual feels (Scherer, 2005). More importantly though, appraisal theorists suggest (Moors et al., 2013), the subjective component can be used as a doorway into exploring the other emotion components, through which rests the potential to explore the '*why*' that underpins an emotional experience– that is the functional and consequential role of appraisals, physiology, motivation, and behaviour subsystems that elicit an emotion experience.

While each of these organismic subsystems typically operate independently, they are temporarily harnessed through the emotion process in response to a bio-evolutionary interest in wellbeing (Meuleman et al., 2019). Through this interest, emotion takes control precedence, bridging mind and body, as each component becomes oriented toward resolving perceived internal or external threats. The cognitive-evaluative component of emotion drives the emotion process, interacting closely with motivation (action processes), physiology (bodily responses), behaviour (expressed motor responses), and feeling states (subjective experience) to inform adaptational responses that support addressing

intrapersonal and interpersonal difficulties according to wellbeing, which include goal-oriented interests (Frijda, 2007; Fontaine & Scherer, 2013; Smith & Lazarus, 1990). These subsystems remain harnessed to the emotion process until a sufficient response is achieved to resolve the perceived threat to wellbeing.

Through this understanding, the relevance for exploring the functional and consequential role of emotion in PGT student experience becomes plausible. By definition, PGT students' wellbeing is rooted in goal-oriented interests related to their study journey and the independent functioning of each sub-system supports their focused engagement and development of capacities essential for learning (Boekhaerts, 1993; Dirkx, 2009; Seligman, 2018); any perceived threat to wellbeing disrupts this independent functioning (Meuleman et al., 2019) with implications to the student journey through the redirection and conjoined attention of subsystems away from learning toward resolving the threat.
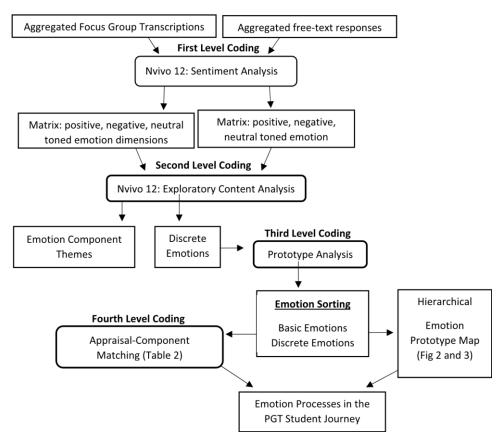
Fig. 1. Multi-Level Qualitative Analysis: An illustrative representation of the four levels of qualitative analysis that supported an exploration of the role of emotions in PGT student experience.

2.2. Cognitive appraisals and the emotion process

Appraisals drive the emotion process (Lazarus, 1991); they provide the cognitive-evaluative and mediational component that allows an individual to make sense of and adapt to their environment according to wellbeing interests.

Primary appraisals are evaluative. They function to detect and assess the relevance of an interaction and assign a judgement of benefit, challenge, or threat according to its potential for satisfying or obstructing goal-oriented concerns (Lazarus, 1991; Moors et al., 2013). Primary appraisals give rise to initial positive or negative feelings that are subject to change according to secondary mediating appraisals. Secondary appraisals function to mediate the emotion response according to an evaluation of an individual's perceived capacity to cope. Combined these appraisals function to impute the

relational meaning of an interaction and influence subsequent responses within each subsystem (Folkman et al., 1986b; Fontaine & Scherer, 2013).

Within the appraisal process, goal commitment is a dominant mediating factor warranting consideration through its relevance to the study journey. Its function is to inform the intensity of change in the motivational, expressive, and physiological component of emotion, leading to the felt meaning that informs experience (Lazarus, 1991; Meuleman et al., 2019; Schiffer, 2019).

Through this review we highlight the link between appraisal and emotion's adaptative qualities, effectively bridging the cognitive with the bodily-expressive component of emotion. Ultimately appraisal informs the type and intensity of emotion arousal, actions, and reactions during an interaction (Lazarus, 2006a, Lazarus, 2006b; Meuleman et al., 2019). This ultimately feeds into the ongoing emotion process and defines person-environment interactions according to goal-oriented interests and with implications for wellbeing through their impact on social, psychological, somatic, and emotional health.

Through a wide body of empirical research, theorists reason an unfolding pattern of appraisal will give rise to a specific emotion (Fridja, 2007; Lazarus, 1991; Meuleman et al., 2019; Roseman, 2011; Scherer, 2005; Smith & Ellsworth, 1985). While there are varying appraisal models and methodological approaches (Frijda, 1986; Lazarus, 2001; Roseman, 2011; Scherer, 2001) theorists agree there are universal patterns of appraisal that elicit specific emotion experiences (Scherer, 2001) and that give each emotion its own unique profile defined according to a pattern of appraisals (Sander et al., 2005).

In the current study, the models of Smith and Ellsworth (1985); Lazarus (2001); Roseman (2011); Scherer (2001) were reviewed, from which a comprehensive pattern of 8 appraisal dimensions was established, each occurring in a minimum of two of the models. These 8 appraisal dimensions were used during the fourth level of coding (see Fig. 1) to establish a projected emotion profile of each feeling identified in the analysis (Table 3). Table 1 provides an overview of each of the 8 appraisal dimensions.

Through this section of writing, we have introduced emotion as a central organizing construct in PGT student experience. It is a nexus between interpersonal and intrapersonal interactions - inseparable from and entangled with cognitive-evaluative-mediational and bodily properties with a bio-evolutionary inheritance oriented toward survival and wellbeing (Frijda & Scherer, 2009; Izard, 2011; Lazarus, 1991). During any experience, emotion is defined by the synergistic interactions of a host of organismic sub-systems activated according to intrinsic and transactional appraisals in response to person-environment interactions (Lazarus, 1991; Scherer, 2005). It is the synchronization of these processes that is reflected in an individual's emotion responses: the amplitude, valence, and salience of their felt meaning; and enacted and expressive behaviours that inform wellbeing and subjective experience (Parkinson, 1996; Smith et al., 1993; Meuleman et al., 2019).

This emotion-centric process has relevance for PGT students who enter study with varying sociocultural histories, prior knowledge and learning experiences, varied expectations of study (Coneyworth et al., 2020; Tobbell and O'Donnell, 2013), and who, predominantly, are heavily goal committed in their study journey. Their capacities for coping with the host of interactions they encounter in

Table 1
An overview of the appraisal dimensions used to explore PGT STUDENT Emotions.

| Novelty | A primary appraisal alerting an individual to an internal or external environmental change and informs initial measures of relevance, which stimulates the direction and intensity of attention according to the degree of suddenness, familiarity, and predictability of an event (Fontaine & Scherer, 2013). |

Intrinsic Pleasantness	A primary appraisal giving rise to an initial liking or disliking response that informs engagement or avoidance behaviors (Scherer, 2001, p. 95)
Goal Relevance	A primary appraisal that measures the relevance or importance of an encounter according to an individual's wellbeing interests (Lazarus, 2001, p. 55; Roseman, 2011). The degree of relevance will determine the attentional orientation to the event and is influenced according to the importance of the goal. For example, a threat to economic wellbeing has a greater ranking than the threat of missing an evening of entertainment with friends (Scherer, 2001, p. 95).
Causal Attribution	This secondary appraisal assigns responsibility for an event and directly informs the response of other subsystems. Attributed agency includes self, other, or circumstances and the intent is judged as intentional, unintentional, or resulting through negligence (Lazarus, 2001; Roseman, 2011; Scherer, 2001).
Goal Conduciveness	A secondary appraisal judging the degree of conduciveness of an event for achieving one or more of the intended goals.
Outcome Probability	A secondary appraisal of the certainty or probability of a goal-relevant outcome and is significant given that outcome drives an emotion response more so than the event itself (Ellsworth & Scherer, 2003; Roseman, 2011).
Expectation	Expectation appraisals evaluate whether an outcome violates or confirms an individual's explicit expectations of an event in terms of goal achievement (Roseman, 2011; Sander & Scherer, 2005).
Coping Potential	A secondary appraisal assessing capacity for coping with an assigned threat. This appraisal is based on the perceived control and power an individual has, to modify an outcome and their capacity to adjust to an event that is beyond their control (Ellsworth & Scherer, 2003; R.S. Lazarus, 2006).

and across the various eco-systems that define their journey depends on the interplay of the emotion components (Author A & Author B, 2021). This interplay informs how they feel, act, and react within their environment and has behavioural, motivational, physiological, psychological, and social consequences which inform capacities for learning and have implications for wellbeing and experience (Fontaine & Scherer, 2013; Smith & Lazarus, 1990; Stets & Serpe, 2016).

In this study we explore PGT student experience as a journey defined by emotion. Through our review of literature, we have arrived at four key understandings that inform our methodological approach:

1 Emotion is a multi-componential process that harnesses otherwise independently operating organismic sub-systems including cognition, physiology, motivation, behaviour, and subjective experience.
2 Feeling, or felt meaning, is the emotion component that denotes subjective experience.
3 Felt meaning is the integrated and labelled representation of an emotion-specific outcome arrived at through the interplay of the various emotion components driven according to a sequence of appraisals and coping processes with motivational, behavioural, social, and expressive consequences (Fontaine & Scherer, 2013; Lazarus, 2006a, Lazarus, 2006b).
4 Each emotion outcome is unique to a distinct pattern of appraisals and reflects an individual's evaluation of the benefit or harm presented in each interaction (Lazarus & Smith, 1991).

Through this understanding, we propose there is potential to move beyond satisfaction measures of *what* students feel, to measures of subjective experience that support an exploration of *why* students feel the way they do. Through an analysis of *why* resides the opportunity for new insights defined by an understanding of the appraisal dimensions, coping approaches, relational meanings, and consequential action tendencies that contribute to the PGT student experience. These key ideas inform the next section of writing which introduces the methodological approach used to explore the functional and consequential role of emotion as an orchestrating feature of PGT student experience.

Methodology

This study conceives emotion as a central driver in PGT student experience, arrived at through a multicomponent process functioning adaptively in response to situational demands, constraints, and in the interest of wellbeing (Lazarus, 1991; Scherer, 2005). Our aim is to explore and better understand the functional and consequential role that emotion plays in the PGT student experience. Exploring the role of these processes is a complex undertaking. To support our methodology, we draw from Scherer's Component Process Model (CPM) (2005) using the feeling component of the emotion process to guide the exploration (Fontaine & Scherer, 2013).

Feelings are the outward expression of an individual's subjective experience. They are the conscious component in the emotion process and provide an individual with an awareness of their own internal

functioning (Fontaine & Scherer, 2013). Feelings support an exploration of the functional and consequential role of emotions in three distinct ways:

1) Through their affective nature, feelings provide insight into the quality of an emotion experience through dimensions of valence (pleasant vs unpleasant), arousal (calm vs excited), and/or tension (relaxed vs stressed) (Fontaine & Scherer, 2013; Harmon-Jones et al., 2017; Lazarus, 2006a, Lazarus, 2006b).

2) Feelings provide a labelled representation of discrete emotion experiences, each evoking its own specific, adaptive emotion response according to their affective dimension (arousal, valence, tension); the eliciting event; and the combinations of appraisals that inform motivations and behaviours (Ekman & Cordaro, 2011; Fontaine & Scherer, 2013; Lazarus, 2006a, Lazarus, 2006b; Shaver et al., 2001). Within discrete emotion families, basic emotions have universal recognition and shared language labels that include anger, fear, sadness, joy, happiness, surprise. They are used to denote a larger family of related emotion states (Ekman & Cordaro, 2011). For example, fear is an emotion label that includes anxiety, worry, distress, shock, panic, and fright.

3) Feelings can be accessed as a written or verbal expression of individual emotion experiences and provide insight into the various emotion components (Lazarus, 2006a, Lazarus, 2006b; Scherer, 2005). A free response design supports maximum accuracy in reporting and is suited to exploratory research but is limited in empirical studies where the breadth and lack of depth of emotion responses is a prohibiting factor (Fontaine & Scherer, 2013; Rowe & Fitness, 2018). Drawing from Scherer (2005, p. 716) in this research, any labels or expressions denoting an affective phenomenon will be used as evidence of a feeling state.

We use these key features to guide our exploratory approach to analysis using subjective experience as a starting point for our methodological approach from which we access students' felt meaning, allowing us to gain insight into the other emotion components.

3.1. Aims and research questions

The data in this study forms part of a larger study exploring the role of emotion in PGT student experience (including a granular analysis of the emotions experienced by distance learning vs on-campus students). The focus of this study, however, is to report global findings from a three-year repeated cross-sectional research design exploring PGT student experience as a relationship with emotion and wellbeing through interactions across 5 facets of the student journey: Academic, Expectations, University Services, Daily Life, Culture. Specifically, the research addressed the following exploratory questions:

1 What emotions do PGT students feel?
2 What is the functional and consequential role of emotion in PGT student experience?

3.2. Context and procedure

The research took place over a 3-year period, (2017–2020), in the School of Education and Social Work at a Scottish University. Data was collected annually using a two-phase process. In October of each academic year, PGT students were recruited via university email to participate in a 3-part survey that used Likert scale and free-text questions to capture their experiences across 5 facets of the student journey and included measures of wellbeing. As a final question in the survey, respondents were asked to indicate their interest in participating in a follow-up focus group. Follow-up email communications supported focus-group recruitment. The purpose of the semi-structured focus group was to explore in greater depth, key findings arising from the survey. From the annual statistical and thematic data analysis (Maguire & Delahunt, 2017) emotion emerged naturally as a core factor in student experience and spurred on our interest in a deeper exploration and re-analysis of the qualitative data as an aggregate data set giving emotion an explicit focus.

The initial re-sorting of the data involved creating two aggregated data sets, one with focus group transcriptions that captured the subjective experiences of 13 participants (female = 11, male = 2) and one for free-text comments with the views of 98 participants captured through the survey responses. Participants were located across a variety of disciplines: Education, Psychology of Education, Social Work, Leadership and Innovation, and Community Education and represented the diverse demographic nature of the population as summarised in Table 2.

In the following section, we set the stage for a new approach to exploring and understanding PGT student experience as we unfold the steps involved in our approach to re-analysing the data.

3.3. *A multi-level qualitative approach to exploring emotion*

Qualitative analysis embraces holism; it acknowledges the complexity of the lived experience defined according to the synergistic interactions of the individual with events and contexts, from which a richness of discovery and exploration, leading to new thinking and hypothesis development (Miles et al., 2018). This, paired with the rigor, transparency, and flexibility qualitative analysis affords, makes it effective for achieving an in-depth exploration and analysis of the phenomenology of emotion experiences that define the PGT student journey.

The analysis began with data condensing, an approach that Miles, Huberman, and Saldana (2018) ̃ suggest supports organising data in a focused way to enable addressing what Cohen, Mannion, and Morrison (2018) describe as the complexity of qualitative data analysis, moving from description, to understanding, interpretation, and conclusions. The three years of qualitative data was cleaned; transcripts had unwanted dialogue including instructional information and researcher narrative removed, and free-text comments

Table 2
An overview of demographic information capturing the diversity of the participant population.

Characteristic		
Gender	Female	79
	Male	19
	Other	0
Age	18–24	9
	25–30	24
	31–39	34
	40–49	27
	50–59	2
	60+	2
Type of Study	On campus Learning	51
	Distance Learning	47
Current Year of Study	First	53
	Second	39

	Third	6
Origin	International (not EU)	31
	International (EU)	7
	Scotland	48
	Rest of UK	12
First Language English	Yes	68
	No	31
Dependents	Yes	46
	No	52
Work Status	Full time	31
	Part time	32
	Not Working	33
	Retired	2

Table 3
Projected emotion profiles according to appraisal patterns matched to feelings experienced by PGT students.

Appraisal Dimension		Novelty -sudden (S) -familiarity (F) -predictability (P)	Intrinsic Pleasantness	Goal Relevance	Causal Attribution	Outcome Probability	Expectation Discrepancy	Goal Conduciveness	Coping Potential -control (C) -power (PW) -adaptability (A)
Basic Emotion	Sub-ordinant Groupings of Emotion								
Anger	**Core (Hot Anger)** Resentment hate	High - S Low - F Low – P	low	high	other, intentional	very certain	Dissonant	Obstructive	high - C high - PW high - A
	Non-Core (Cold Anger) Frustration	low-medium -S low-medium -F low-medium -P	very low	low-medium	intentional/ negligence	very certain	open	obstructive	low-medium - C low-medium - PW high - A
Fear	**Core** Scare Shock Panic	High - S Low - F Low – P	low	high	other/ natural	certain	dissonant	obstructive	Open - C very low - PW low - A
	Non - Core Anxiety Discomfort Worry Apprehension Distress	Low - S Low - F Open – P	open	medium	other/natural	low-medium certainty	open	obstructive	Low - C Low - PW Medium - A
Sadness	**Core** Despondent Intimidation	Low - S Low - F Open – P	open/low	high	other	very certain	open	obstructive	Low - C Low - PW Medium - A
	Non - Core Isolation Disgruntlement Guilt Discouragement Insecurity Disappointment*	High - S Low - F Low – P	low	medium	self other	very certain	dissonant	obstructive	Low - C Low - PW Open - A
Happiness/Elation	**Core** Enjoyment Elation* Happiness	Low - S high*/medium – F Open – P	high	medium Positive future expectations	open	very certain	open	conducive	Open - C Open - PW high/med* - A
	Non-Core Pride Excitement Gratitude Empowerment Value Belonging Pleasure	Open -S Open - F Open - P	open	high	self	very certain	open	very conducive	Medium - C Medium - PW High - A
Amazement/ Surprise	**Core** Surprise	High - S Low - F Low - P	high	high	open	open	consonant	conducive	Open - C Open - PW Open - A
	Non-Core - None								

NOTE: **open** - adopted from Sander et al. (2005, p. 325) to indicate a variety of different outcomes are possible or to signal that the appraisal check does not have relevance.
low/high/certainty/conducive: represent the polarity of the appraisal value assigned to the corresponding emotion group.

were edited to correct spelling and grammatical inaccuracies without violating the wording and meaning of the text (Chu & Ilyas, 2016). The data was further condensed into two aggregate sets, one containing focus group transcripts and the second containing free-text data. Aggregate sets underwent a further four levels of analysis as illustrated in Fig. 1.

First level coding involved the use of QSR International Nvivo 12 software (2018) to complete a sentiment analysis. Sentiment analysis is a multi-modal auto-coding approach used to extract affective information from text (Poria et al., 2018). The sentence-level sentiment analysis provided a first cycle of coding, sorting the data according to negative, positive, and neutral-toned emotion dimensions (Poria et al., 2018). This initial sorting by emotion polarity further condensed the extensive data sets into accessible chunks, and supported the next, second level coding, using exploratory content analysis.

Content analysis is an effective approach for constructing variable-oriented connections and befits an analysis of large aggregate data sets (Cohen et al., 2018, p. 437). The granular level of engagement supported by content analysis served to confirm the first level coding, and to enrich our understanding of the affective content. Second-level coding was used to group the data at a more granular, categorical level (Miles et al., 2018). Through this level of analysis, the two data sets merged as one, coded to capture the various discrete emotion categories emerging from the text. Empirically and theoretically defined semantic tables (Scherer, 2005) were used to support this analysis process, ensuring all emotion words could be identified and sorted.

At this point in the analysis, emotion component themes emerged through the exploratory process. Data was coded (Braun & Clark, 2006) with the parent codes: motivation, coping, and appraisal components of emotion. Within each parent code data was arranged hierarchically according to its relationship to the parent code. For example, motivation had a second level coding for positive and negative impacts to motivation, coping was sub-coded according to adaptive and maladaptive types, and appraisals included a second level coding according to benefit, challenge, or threat. This data has been reserved for future reporting as part of the wider study exploring the role of emotion in PGT student experience.

A third level of analysis was guided by Shaver et al.'s (1987) hierarchically arranged, three-tier emotion prototype model. Prototype approaches in emotion research have empirical strength, providing a plausible approach for understanding the relationships and distinctive characteristics that define an emotion concept (Shaver et al., 1987; Rowe & Fitness, 2015, 2018). The prototype's three tier arrangement depicts an emotion concept according to its defining elements: the superordinate level represents the general category (negative emotion); the basic level captures clear distinctions between categories and represents the most frequently used and salient categories emerging in emotion theory (for example, anger, fear, sadness are negative toned basic emotions); the subordinate level supports clustering emotions according to fine distinctions within the emotion category. In line with Shaver et al. (1987), we use core and noncore classifications to denote such distinctions. Core subcategories encapsulate clusters of emotions that are most synonymous with the basic level emotion while noncore are more distinct and specialized discrete emotions (Shaver et al., 1987, p. 37). For example, anger is synonymous with rage, fury, hostility, and hate. While, envy, jealousy, and contempt, although a subcategory of anger, are clustered separately indicating they have distinct and specialized profile features. The varying emotion lexicon is significant in terms of differentiating emotion intensity and revealing important information about the situational demands, constraints, appraisals, and relational meaning that defines the interaction or event (Shaver et al., 1987; Sander et al., 2005). This idea has relevance within our fourth level of analysis as we move on to matching feelings and appraisal components.

At the third level of analysis, the prototype approach was used to sort the discrete emotion data according to basic emotions, after which it became possible to create hierarchical arrangements depicting the relations between emotion categories for negative and positive emotion dimensions.

To avoid the inherent risk in qualitative analysis of privileging one interpretation over another and in keeping with the rigorous approach supported by qualitative analysis (Cohen et al., 2018), a second coder scrutinized the emotion data, evaluating each account and judging the analysis according to the key features of feelings that informed the coding system. Jottings, in the form of sticky notes, were used by the secondary coder to capture questions, concerns, and aspects of the data and to signal where further analytic attention was needed (Miles et al., 2018). The jottings were a useful tool to support critical discussion from which the primary and secondary coder could reflect, discuss, and re-analysis to either confirm or allow for new interpretations (Miles et al., 2018).

The final, fourth level of analysis engaged theoretical and empirically validated contingency tables (Frijda, 1986; Roseman, 2011, p. 70–71; Roseman 2013, p. 144; Scherer, 2001, pp. 114–115; Scherer, 2009; So et al., 2015) to support the interpretation of emotion findings and the matching of feeling states with appraisal patterns (Sander et al., 2005). Although contingency tables are limited in their capacity to infer causality, they do provide insight into the relationship between variables (Cohen, Mannion, and Morrison, 2018), which has merit in the exploration of emotion as a factor in PGT student experience.

The contingency tables supported the creation of projected emotion profiles for each feeling identified during the level 3 analysis and are presented in Table 3. The emotion profiles presented in Table 3 will be used to support our key findings and discussion offering insight into the functional and consequential role of emotion in PGT student experience.

Findings and discussion

The research aimed to explore and better understand the role of emotion in PGT student experience. It was anticipated the findings would provide insight into the emotions experienced by PGT students and that using emotion profiles would shed light on the functional and consequential role of emotions from which new understanding might contribute to sector-wide discussions exploring proactive measures that support positive wellbeing and PGT student experience.

4.1. PGT student emotions

The prototype analysis provided good insight into the feelings PGT students experience. These findings were used, in part with theoretically and empirically validated appraisal patterns (Ellsworth & Scherer, 2003; Frijda, 1986; Roseman, 2011, 2013; Scherer, 2001; Smith & Lazarus, 1990; So et al., 2015; van Dijk & Zeelenburg, 2002) to construct emotion profiles. In this section of writing, we systematically address each research question; first, sharing findings from the prototype analysis conveying emotions that PGT student experience. These are presented according to negative and positive emotion dimensions (Figs. 2 and 3). Following each set of these findings, we use the emotion profiles presented in Table 3 to facilitate our discussion on the functional and consequential role of the various emotions experienced by PGT students.

A total of 194 emotion statements were extracted from the data sets. Of these, 114 were associated with negative emotion dimensions and 80 were associated with positive emotion dimensions. Figs. 2 and 3 provide a summary of findings.

4.1.1. Negative Emotion Dimensions
Within the negative emotion dimension, *Sadness* and *Fear* were most frequently reported. Sadness has been a dominant finding in previous student emotion research (Rowe & Fitness, 2018;) arising in

response to unpleasant, goal relevant and incongruent, interpersonal events (Sander & Scherer, 2009). It is associated with appraisals of other agency and has low coping potential through a perceived loss of resources (Ellsworth & Scherer, 2003; Sander & Scherer, 2009). Within the sadness family the findings suggest non-core emotions *isolation, discouragement,* and *insecurity* are experienced most frequently by students. Isolation reflects a lack of social or emotional support; discouragement is a feeling that arises through a perceived denigration of effort, and insecurity is a representation of self-doubt. These feelings arise through an appraisal of unexpectedness and low situational control and have consequences for behaviour and motivation because they disrupt an individual's capacity to make predictions on future outcomes, creating a sense of uncertainty. Uncertainty has negative implications for risk taking and decision-making and promotes withdrawal and avoidance behaviours (So et al., 2015).

The experience of this negative family of emotions is significant for PGT students; the emotions within this family, tax the bodies' systems and signal resource depletion which limits or discourages action (Robinson & Thomson, 2021). This idea emerged in our findings as one student shared feelings of despondence:

> *'There were times when I would give up because I am looking for something and I cannot find it and I have nobody to ask.'*

'Witt et al. (2009) found that feelings of sadness correlated with increased perceptions of physical burden. When this happens, an individual is most likely to seek avoidance strategies as a means of coping with the event while also signalling to others a need for support (Zeman et al., 2019). The follow excerpt provides context:

> *'And we are all going through a lot… there were four of us one day and I said, 'I have no idea what I am talking about' - my brain felt it had gone. We've all had moments of self-doubt – no we can't do it.'*

Sadness has negative implications for learning through decreased cognitive flexibility (Compton et al., 2004). It impairs reasoning, healthy thought processes, concentration and decision making because of decreased intrinsic alertness and response readiness paired with increased inward introspection and reappraisal of goals (Chepenik et al., 2007; Finucane et al., 2010). These factors negatively impact engagement and social connectedness, which are essential for effective learning in PGT study (QAA, 2018).

Within the *Fear* dimension, anxiety has garnered much attention as an emotion relevant to student experience (Dirkx, 2009; Pekrun, 2014; Rowe & Fitness, 2018; Vytal et al., 2013). Pekrun's (2014) research suggests anxiety is an achievement emotion associated with the evaluative aspect of learning; this idea is supported by Dirxk (2009) who identified anxiety as commonly associated with learning tasks and assessments in adult learning contexts. Within this study, findings indicate *anxiety, worry,* and *distress* are three fear-family emotions that frequent PGT student experience. Within the literature these words have been used synonymously to represent an episodic emotion state (Strongman, 2003; Sweeny & Dooley, 2017). The following emotion experience provides context:
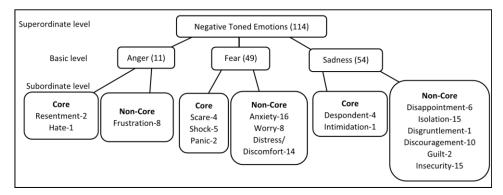
Fig. 2. Negative emotion dimensions that emerged from the prototype analysis.
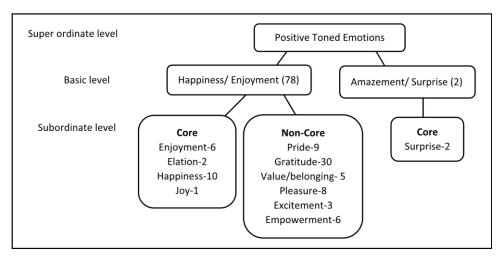
Fig. 3. Positive emotion dimensions that emerged from the prototype analysis.

'There is also the anxiety about performance where you think you speak up in class and you sound a certain way, they might expect more from you and might fail people when it comes to that.'

Fear-family emotions are characterized by feelings of doom and reflect a highly aroused, aversive state through which an individual is motivated to act to resolve a threatening event (Sander & Scherer, 2009). Unlike core fear emotions that arise suddenly in response to an immediate threatening event and that can motivate protective actions, anxiety, worry, and distress arise through perceptions of future threat and are aversive, leading potentially to maladaptive and debilitating behaviours (So et al., 2015). These emotions can be longer lasting and disorient attention from learning toward the source of stress, depleting attentional resources and infringing on cognitive capacities that are needed to support reasoning, decision-making, and memory (Tyng et al., 2017). Our findings suggest a host of environmental factors, beyond learning tasks and assessments act to elicit fear-based emotions. This was highlighted in our final round of focus group data collected during the onset of the COVID-19 pandemic in April 2020, where the multiple layers of interactions including financial concerns, care responsibilities, and study expectations embodied the emotion experiences:

It was this absolute emotional roller coaster; it has been the best and the worst thing I have ever done in terms of the financial impact. I can't minimize that it has been incredibly hard; to have to keep a car on the road and a roof over your head and I have a husband and three children.

There is also worrying about money, as everyone is worried about money, and whilst we have been at home [during COVID] I haven't worked now for 3 months so it is a difficult situation.

For other PGT students, social concerns provide a source of worry, anxiety, or distress. The following extracts highlight the role of emotion in navigating social contexts and identity formation (Stets & Serpe, 2016) and how attention to the social can disorient attention from learning:

> On the course as well, while studying there are anxieties about personal relationships. I came in very confident that I will be very good social worker but at some point [during placements] that confidence went down because I didn't know how to communicate with my co- workers. It was really stressful for me, and it made me very careful - like I had think to myself, OK I have to say it in a particular way, so they don't misinterpret and that I felt was too stressful.

These cases emphasise emotion as the embodiment of the environmental conditions that define any experience and indicate a time relationship between the emotion episode and the duration of the event, which can threaten wellbeing through the ongoing taxing nature of these negative emotions on coping resources, attention depletion, motivation, and cognition (Harvanek et al., 2021; Robinson & Thomas, 2021; Tyne et al., 2017). This section of writing highlights what Dodge et al. (2012) refers to as a delicate balance between optimal wellbeing and capacities to cope, wherein emotion becomes a balancing point between stress and coping with implications to the study journey informing engagement vs avoidance behaviours. This is significant to our PGT student population who are an increasingly diverse and pluralistic population (Bird 2017; Stets & Serpe, 2016; HESA, 2019). The nature of the stresses they encounter during study are complex – linked to study and life circumstances, with the potential to be long lasting and to elicit multiple emotion experiences having implications to the student journey according to capacities to cope, the impact on the emotion-learning relationship, and wellbeing.

Within the anger emotion family, frustration was most frequently experienced. While the appraisal pattern for anger and frustration is similar in terms of arousal and perceived goal obstruction, the novelty and causal attribution pattern for each emotion differs with implications for the subsequent behaviours. Core anger emotions are sudden and directed outwardly, elicited in response to harmful or unwanted events and indicate low situational control (So et al., 2015). These are mobilizing emotions that motivate aggressive actions to try to eliminate the threat (Ekman, 2022). Unlike anger, frustration builds over time and in response to unpredictable events that can be attributed to negligence directed toward self or other (Sander & Scherer, 2009). The intensity of frustration is relative to the appraisal of predictability and sense of justification and elicits a combination of emotion components including fear and disgust (Breuer et al., 2017). This is captured in the following PGT student's experience of feedback:

> It is frustrating because [the feedback says], "You need to expand on your ideas." I can't expand it; I have run out of [allowed] words. Some of the comments are not necessarily useful because they don't suggest where you could clip one thing to expand another.

Frustration is an unpleasant emotion that can ultimately end in anger and lead to similar hasty decision-making, and antagonistic behaviours; the consequences of frustration can be far reaching, contributing to declining self-esteem, depression, and learned helplessness (Breuer et al., 2017; Sander & Scherer, 2009). For PGT students, study success depends on developing self-efficacy, and autonomy; these are attributes that support identity formation, motivation, effort, and persistence (Cisco, 2020), which are a foundation for master's level learning (QAA, 2018). Alternatively, unlike the heightened arousal and activation of anger which functions to inform hasty decision making, frustration, being less sudden, infers greater situational control; it provides opportunity for regulated thinking and for activating a productive approach to coping; in these cases, frustration can function to support proactive problem-solving to re-establish goal pursuit (Sander & Scherer, 2009).

4.1.2. Positive Emotion Dimensions
PGT students also experience a host of positive emotions. While negative emotions tax the emotion sub-systems through their demand on coping resources, positive emotions serve as a source of

enjoyment (Strongman, 2003). They support optimal functioning, broadening prospective action tendencies through increased awareness and engagement (Fredrickson, 1998) with the potential to positively impact social relationships and cognitive complexity (Sander & Scherer, 2009). Positive emotion experiences arise through an appraisal process that evaluates an event as goal relevant, conducive, and pleasant (Sander & Scherer, 2009). Findings highlight positive emotion experiences that inform PGT study. These predominantly reside within the Happiness/enjoyment family of emotions and relate most frequently to *happiness* and *gratitude* (Fig. 3).

Happiness is an overarching term that represents the emotion family and is a core emotion. As a core emotion, it has been used synonymously with joy, elation, and enjoyment; it is indicative of an individual's sense of making progress toward goal achievement (Sander & Scherer, 2009). Happiness is considered more than a pleasant experience, having significant impact on motivation, social connectedness, prosocial behaviours, and productivity, it informs wellbeing (Sheldon et al., 2010). This makes it a significant emotion in PGT student experience, functioning to broaden engagement, relationships, and learning during PGT study. For PGT students, who are heavily goal committed, happiness provides motivation and resilience, two resources essential for productive coping during periods of perceived threat (Cohn et al., 2009). Findings suggest student happiness is informed by a sense of personal achievement at having overcome a challenge:

> *It is a challenge to find where it will take you, this, and I think because I love studying, I love reading, I love discovering, so it was very enjoyable, a challenge for me, and I can call it a challenge in my life because I've never been studying or doing something like that, so I have really a good experience and I wish that I will always remember this, I think.*

It is further informed through the quality of relationships and learning experiences:

> *I find all the lecturers engaging and passionate about their subject. They make me excited about the subject and I WANT to learn more. I love the way [the tutors] deliver the modules. I can say, maybe one was not good at all, but the other three, they were really perfect, and I love how I progressed, yeah, and I love how warm they are to us as online students, so someone you don't see often, but you'll connect always.*

Within the Happiness family, gratitude is a commonly experienced non-core feeling state that has been conceptualized as an episodic emotion, a dispositional trait, and a coping resource (Shaver et al., 1987; Sander & Scherer, 2009). It is a pleasant emotion connected with hope, happiness, and contentment and infers an appraisal of benefit resulting from interpersonal events where the individual's perceived benefit is attributed to the efforts of another (Sander & Scherer, 2009; Seligman, 2018). In line with this definition, our findings suggest PGT students experience gratitude through a host of socio-culturally informed, institution-related, and discipline specific factors. One student expressed her gratitude at the cost savings she had found through her choice to attend this university.

> *'I told my husband I am really grateful I came to [—-] because I can save money a lot. A lot of Indonesian students are on the scholarship, but they must work because it's not enough money to in London or Manchester Edinburgh. They say my flat is very cheap and I have one big living room and they only have studio, and it is double the money. And when they take me to lunch, oh my god it is £11 or £12, and I can get £7 for a buffet and everything.'*

Other students expressed gratitude for the availability of quality university resources and social structures:

> *'The Wi-Fi - for us - we are very grateful because if you come to our country, it is not a good Wi-Fi but here the access - or the library - it is new thing for us and very modern.'*

> *'Knowing that IT support system is there makes it easier to take a risk and try different things.'*

Risk-taking is an important factor in PGT student learning. It is empowering and supports the development of confidence and self- esteem, which in turn inform optimal functioning (Rolfe, 2010; So et al., 2015). Furthermore, it is an avenue through which students build confidence, and confidence is a key factor in coping with anxiety (Hanton et al., 2004). Risk-taking and being ambitious are a natural part of the post-university world, making this an important factor in adult learning (Whitton, 2018). This experience provides good insight into the interconnectedness of the various sub-systems, signalling the functional and consequential importance of positive emotions for developing core attitudes and coping resources that can be used to support wellbeing during periods of threat. Distance learning students expresses gratitude for programme level approaches to building relationships:

> *'I was really grateful to be meeting face-to-face the people that we were going to be studying online with and make the connections and join the WhatsApp group and build that network that we needed going through.'*

Equally, findings indicate PGT students experience gratitude through an awareness of personal growth and transformation credited to their student journey:

> *First of all, I am grateful for the experience and for the opportunity to take part in this programme and I feel that since I started, I have grown a whole lot and especially with the first two modules they were a confirmation of some of the things that I already knew but I didn't know how to articulate, and I didn't know that they are actually things.*

Happiness emotions are a positive finding for PGT student experience. Happiness functions to support resilience, creative thinking, inter and intrapersonal relationships, motivation, and the ability to adapt to changing events. For PGT students who encounter an array of stresses during study (Coneyworth et al., 200; Strongman, 2003) these are all factors that support coping which will enable ongoing engagement with study and preserve positive wellbeing (Cohn et al., 2009; Lazarus, 2006a, Lazarus, 2006b; Seligman, 2018). The following excerpt provides context for how happiness can support wellbeing even during periods when an individual is uncertain of how to cope:

> *Although I was completely overwhelmed during the induction period, I was genuinely excited and deeply happy to be here!*

Interestingly, *confusion* and *uncertainty* arose 21 times during the analysis, suggesting they are frequent states experienced by PGT students. However, their nomenclature as emotion states is contested in the literature and therefore, they were not included in the emotion prototype maps (Ellsworth, 2003; Hess, 2003). There is general agreement however, that each of these is a cognitive experience that shares a close connection with affect and elicits various emotional responses (Anderson et al., 2019; Tyng et al., 2017). This finding raises questions of the role these states have in PGT student experience and highlights future lines of inquiry.

4.2. Limitations

This study has investigated the role of emotion in PGT student experience using a multicomponent process guided by appraisal antecedents of emotion to better understand the implications of organismic subsystems on subjective experience. This approach infers a linear relationship between emotion processes (Lazarus, 1991; Roseman, 2013; Scherer, 2001) and, although providing relevant and useful evidence, does not afford opportunity for exploring the multi-directional interactions of the organismic sub-systems (Meuleman et al., 2019) and how these manifest different emotion experiences. This is an area for future investigation. Further, as noted in the discussion, the final focus group data was collected in April 2020, one month after the onset of the COVID-19 restrictions were implemented at universities in the UK. The authors acknowledge this may have had a heightened influenced on participant emotion responses because of the situation. While the study findings support previous research highlighting the embodied nature of emotion (Robinson & Thomas, 2021), a further study specific to the role of emotion during COVID-19 is an area for future research. Lastly, findings

from this study are limited through the fact that we report on perceived emotion experiences as expressed by students from one school as part of a student experience project and cannot be generalized beyond that. However, they can contribute to sector-wide discussions about the role of emotion in PGT student experience and how this can be used to support proactive approaches that support student wellbeing.

Conclusion

UK Universities increasingly focus attention on the importance of student wellbeing as a key factor in student success. The findings from this study reaffirm and extend previous research signalling this relationship (Ingram & White, 2020; White & Ingram, 2021) and highlight emotion as a core factor defining student experience. Findings confirm emotion is a central driver in student experience, entangled closely with learning and wellbeing, functioning synergistically with biopsychosocial cultural processes across various eco-systems and arising in response to an array of stressors that threaten, challenge, or benefit the student journey. In line with emotion research (Lazarus, 1991; Lazarus, 2006a, Lazarus, 2006b; Pekrun, 2014, 2019; Roseman, 2013; Rowe & Fitness, 2015, 2018; Sander & Scherer, 2009; So et al., 2015), study findings support a link between appraisal and emotion's adaptive qualities, having a deleterious or beneficial impact on student experience according to an individual's capacity to cope with perceived stressors. Findings suggest the cognitive mediational-evaluative component of emotion informs attention to an event – either broadening or disorienting its relationship with learning according to appraisals of relevance and functioning to heighten or disrupt the autonomous working of each sub-system with consequences to cognitive flexibility, motivation, and behaviour (Compton et al., 2004; Robinson & Thomson, 2021; Tyng et al., 2017).

Negative emotions threaten PGT student experience, disrupting essential aspects of wellbeing through the deleterious impact on self-esteem, confidence, sense of belonging, and social interactions, which consequentially disrupt quality learning through impaired cognitive flexibility (Compton et al., 2004; Tyng et al., 2017). They reflect heightened stress, which over the long term has negative implications for health (Harvanek et al., 2021). Positive emotions broaden the capacity of each system and promote optimal functioning (Fredrickson, 2013). Cognitive functioning and social engagement are essential for PGT student success and support optimal wellbeing through an individual's capacity to meet goal outcomes. They contribute to the transformative learning that defines master's level study through their capacity to support creative thinking, problem-solving, critical discourse, decision-making, persistence, identity, and resilience, which in turn promote the transformation of knowledge structures, personality, feelings, and relationships with others (QAA, 2018; Stets & Serpe, 2016; Taylor, 2017).

In this study we conceptualize PGT student experience as an emotion-centric process underpinning wellbeing and driving learner success. Through our investigation we have sought to identify the feelings that PGT students experience and to use these as a foundation for exploring and better understanding the functional and consequential role of emotion in PGT student experience. As part of our research, we present a new methodological approach for exploring student experience beyond a measure of satisfaction, from which it is possible to discern the cognitive, motivational, and behavioural consequences for each felt experience. We propose this understanding contributes to the call for a paradigm shift in approaches to student wellbeing (AdvanceHE, & QAA 2021; Feldman & Newman, 2021; GuildHE, 2018; Razak, Wan & Sirat, 2017) through a focus on strengthening students' emotional awareness, competencies, and control and through which rests the potential for minimizing the adverse consequences of stress (Harvanek et al., 2021) that might otherwise threaten the student experience.

Our hope is our findings will contribute to sector-wide discussions shaping policy and programme directives that function to support student wellbeing through proactive approaches that build student

agency over wellbeing and thereby contribute to UK Universities 2018–2023 strategic goal of maximizing their positive impact for students.

Disclosure Statement

The contents of this article present the authors' own work. All citations or paraphrased work have been included in the reference list. This work has not been previously published nor is it being considered for publication elsewhere. The authors declare no conflict of interest.

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Synthesis of Findings with Metatheoretical Insights

Themes and Sub-Categories Emerging from Articles 1, 2, 4, and 5 Paired with Meta-Theoretical Analysis and Organised using White and Ingram's (2021) Integrated Framework.					
Themes and Sub-Categories Emerging from the Initial Stage of Analysis		**Key Findings from the Individual Articles**			
		White and Malkus (2019)	**Ingram and White (2020)**	**White and Sangster (2022)**	**White and Ingram (2023)**
Emotion Processes	**1. Goals**	The teacher's instructional practice was driven by achievement goals. Achievement goals influenced how the teacher felt teaching mathematics (anxious). Achievement goals influenced interpersonal interactions (for example, children working in isolation and the teacher using direct instruction).	Students enter PGT study with aspirational goals. Students engage activity pursuit goals – short term goals contributing to the aspirational goal (Finding literature; reading programme information; completing assignments) . Students are motivated and feel positive when systems work effectively to help them maintain their goal-directed trajectories.	Students enter PGDE study with aspirational goals. Students appraise the environment based on how it supports their goal progress. Goal-related appraisals influence how students feel and their motivations. Factors influencing activity-related goals include, feedback, time spent online; organisation of the module space, tutor presence.	Appraisals of goal congruency influenced students' emotion response and motivation
	Relevant Research Reviewed and Perspectives Summarised				
	Lazarus (1991, 2006)	• Appraisal Theory; Emotions are central to life through their relationship with an individual's goals, values, and beliefs. These shape personal meaning. • Goal-related appraisals interact with ego-identify through their influence on an individual's relationship with the world based on future expectations and inform evaluations of challenge, threat, or benefit with implications to motivation and affect states. • Goals are hierarchically arranged moving from short-term concrete goals to longer term aspirational goals.			
	Roseman (2011)	• Appraisal Theory; Goals drive motivation and behaviour			
	Deci and Ryan (2017)	• Goals have an influence on motivation: if they are set in a controlling way, that potentially threaten or have contingent rewards attached to them, they can be demotivating for individuals (p. 162)			

	Mejía and Hooker (2017)	• Development in adulthood is based on setting and working toward goals			
	Jacob et al. (2019)	• Control-Value Theory; Achievement goals drive student motivation and learning in higher education and are associated with a host of emotions.			
	Clore et al. (2022)	• Active pursuit goals are goals that an individual believes can be attained through intentional and strategic actions. • Active pursuit goals interact with emotion processes through their influence on motivation, cognition, and feeling states.			
	2. Appraisal Variables				
	• *Controllability*	**White and Malkus (2019)**	**Ingram and White (2020)**	**White and Sangster (2022)**	**White and Ingram (2023)**
		The teacher experienced anxiety teacher maths. This was related to perceived responsibility for ensuring children could pass state tests; she enacted control by drawing from traditional teaching approaches, even though these conflicted with her pedagogical values.	When students encounter an event that they do not know how to control, it leads to a threat appraisal, paired with a negative feeling state.	When students encounter an event that they do not know how to control, it leads to a threat appraisal, paired with a negative feeling state.	Sense of control relies on students feeling they can access support.

Relevant Research Reviewed and Perspectives Summarised

Freire et al. (2020)	• Control can be understood as a type of coping mechanism that supports an individual to engage and overcome an environmental stressor.
Helzer and Jayawickereme (2015)	• Two types of control inform an individual's sense of wellbeing. Primary control infers and individual has agency over the events that define the person-environment interactions; Secondary control infers the person engages psychological processes to establish a sense of control.
Pekrun (2006, 2019)	• Control-Value Theory • Appraisals of control and value are necessary to elicit activity and achievement-related emotions. • Perceived teaching ability informs a sense of control with direct implications to the feeling state.

	• Over-challenge negatively influences students' sense of control and subjective value. • Contextual conditions have implications for appraisals of controllability and subjective value for activities.			
Hong et al. (2021)	• Perceptions of control have a direct relationship with wellbeing according to behavioural, physical, and psycho-social health (positive affect, life satisfaction, sense of purpose, increased social connectedness).			
Ryan and Deci (2017, 2020)	• Assessment, fixed due dates can have a negative effect on intrinsic motivation because it is a form of external control. • Personal autonomy is directly influenced by an individual's capacity to exert control through volition and choice. • Teachers are "constrained by controlling mandates, institutional pressures, and leadership styles." (2020, p. 1)			
• *Certainty*	**White and Malkus (2019)**	**Ingram and White (2020)**	**White and Sangster (2022)**	**White and Ingram (2023)**
	The teacher relied on traditional approaches to teaching maths as a way of establishing certainty of the children's abilities to pass the state tests. AID promoted certainty – it gave the teacher a framework, so she learned *how* to plan lessons she valued.	Certainty of *how* to act influences PGT students' emotion responses - (Uncertainty about *how* to improve an assignment leads to frustration). Appraisals of the effectiveness of supports reflected feelings of certainty. Effective supports promoted certainty of how to precede and ineffective supports failed to resolve uncertainty.	Students identified feedback that is linked to criteria and that provides clear next steps as most preferred. Being able to discuss questions with the tutor is a supportive strategy for students to overcome uncertainty. Flexible access to learning material allows students to revisit information.	Students become disengaged when they are uncertain of how to act and cannot access support. Uncertainty can trigger anxiety with negative impact to confidence.

Relevant Research Reviewed and Perspectives Summarised

Ryan and Deci (2020)	Needs-supportive environments promote student autonomy and competence through clear structure, acknowledging improvement and mastery, providing progress-enabling hints when students seemed stuck, being responsive to questions, and acknowledging student perspectives. Structure mediates against anxiety, promotes self-regulated learning, and intrinsic motivation (p. 4).

Ryan et al. (2022)	Higher degree research students identify the value of social supports such as support groups, or non-academic support staff who can meet with them to facilitate discussion, allowing students to identify and problem-solve uncertainties, stress, and heightened emotions.			
Grupe and Nitschke (2013)	Uncertainty about the potential to mitigate against a possible threat leads to feelings of anxiety.			
Anderson et al. (2019)	Uncertainty is a subjective, cognitive experience (awareness) of being ignorant to a future outcome, a feeling of ambiguity related to reliability, credibility, or adequacy of information, or complexity through an inability to comprehend. It negatively impacts thoughts, feelings, and actions; risk taking and decision-making are impeded, with negative interpersonal implications associated with avoidance and withdrawal behaviours.			
• *Coping*	**White and Malkus (2019)**	**Ingram and White (2020)**	**White and Sangster (2022)**	**White and Ingram (2023)**
	The teacher relied on 'accommodating strategies' to maintain goal-oriented interests (she relied on prior learning leading to traditional instruction).	PGT students engage coping approaches (trying to interpret feedback; trying to find resources) and when this does not work, attacking strategies are engaged – demonstrating a link between coping and agency appraisals.	PGDE students experience negative emotion responses in situations where they have limited power or control (long, repetitive days studying online). Coping potential interacts with motivation and wellbeing. Coping approaches include peer and family support; self-pacing; taking a break	Students attempt to use proactive coping strategies including problem-solving, emotion supports. When situational demands exhaust coping strategies, some students turn to maladaptive approaches (avoidance, 'giving up')
Relevant Research Reviewed and Perspectives Summarised				
Lazarus and Folkman (1984) Lazarus (1991, 2006)	• Coping is a process mobilised to manage inter and intrapersonal demands that are taxing the bodies systems. It involves any thought or action an individual adopts to address a situational demand and unfolds in stages (p.144) • Emotion has a mediating link between appraisal and coping; problem-focused and emotion-focused functions of coping (p. 319).			
Sander et al. (2005)	• Component Process Model (CPM)			

	• Emotion processes are guided by internal adaptational drives vested in wellbeing. Coping potential is an appraisal variable defined according to three measures: control to act/change, power to enact change, and the capacity for adjusting to a given event.			
Roseman (2013)	• Emotions represent an integrated system for coping; appraisal functions as part of the emotion process, guiding emotion responses that elicit specific coping strategies (accommodating vs contending; attacking vs rejecting strategies)			
Freire et al. (2020)	• Flexible approaches to coping recognise that coping strategies are situationally specific, and it is the individual's capacity to flexibly combine different strategies according to the situation that provides the most benefits, leading to sense of control.			
Yih et al. (2020)	• Two main categories of coping: Coping as a problem-focused and coping as accommodative			
• *Agency (Blame/praise)*	**White and Malkus (2019)**	**Ingram and White (2020)**	**White and Sangster (2022)**	**White and Ingram (2023)**
	The teacher placed blame on the mathematics curriculum, identifying it as too difficult and the children did not understand.	When students are unable to cope, negative emotions responses occur that inform agency appraisal – leading to 'other blame'. Self-blame did not emerge in the findings. Self-praise was evident when students experienced a perceived success (ie positive feedback)	Participants identify interpersonal constraints as challenging factors in their engagement – but the reporting of this finding does position it as a 'blame appraisal'. No clear 'blame or praise' appraisals emerged through the questions asked in this study.	Positive emotion responses were paired with students' praising systems that were supported their student journey.

Relevant Research Reviewed and Perspectives Summarised

Roseman (2013)	Appraisals of agency relate specifically to causation, and are evaluated according to self, other, or to impersonal circumstances.
Ortony et al. (2022)	Agency appraisals are situation specific standards-based evaluations reflecting how an individual believes an event should transpire. They are expressed as praising or blaming self, other, or object.
	White and Malkus	**Ingram and White**	**White and Sangster**	**White and Ingram**

• *Taste (Appeal) (Valence)*	**(2019)**	**(2020)**	**(2022)**	**(2023)**
	The teacher expressed a dislike for teaching mathematics.	Participants expressed dislike for ineffective communication, and poor role-related support. They found social cohesion appealing. Teacher enthusiasm had a positive influence on affect states.	Participants found long online study days, misuse of the chat box, unappealing. Participants liked social sharing and found it beneficial to their learning experience. Participants like the opportunity for self-pacing; financial benefit of remote learning.	Events or interactions that favoured goal progress elicited positive feelings, while those that threated progress elicited negative feelings.

Relevant Research Reviewed and Perspectives Summarised

Roseman (2011)	Valence is an appraisal dimension that determines unpleasant vs pleasant feelings and drives behaviours in the interest of having more or less of the appealing or unappealing object.
Ortony et al. (2022)	Taste represents a momentary appraisal, evaluating the appeal or unappealing-ness of an object.

3. **Demands/ Resources**	**White and Malkus (2019)**	**Ingram and White (2020)**	**White and Sangster (2022)**	**White and Ingram (2023)**
	Prior learning was a resource that supported the teacher overcoming her anxiety teaching mathematics. Accountability measures constrained the teacher's instructional approaches. The AID planning framework was a resource for the teacher to overcome the	Communication, Effectiveness of Supports, and Connectedness acted as either resources or demands for students encountering challenges. Intended resources – for example feedback, become a demand if the student does not know how to use or interpret the resource.	High demands tax the students' sub-systems (long online days – motivation wanes; migraines set in) Resource availability supports student overcome challenges or uncertainty (accessing tutor support; flexible access to materials; feedback)	Positive emotion experiences act as a resource – informing resilience during periods of heightened stress (feeling excited and proud to begin study, helps overcome feeling overwhelmed during transition). An inability to overcome a demand triggers

		challenge of learning new instructional approaches.			negative emotion responses with negative implications to motivation and behaviour (inability to find literature/ information leads to feeling distressed, defeated and ultimately isolation)

Relevant Research Reviewed and Perspectives Summarised

Havarnek et al. (2021)	• Emotion regulation and self-control are intrapersonal processes that work as resilience factors (resources) moderating the negative impact of stress.
Kleop et al. (2009)	• Lifespan model of development – suggests challenge is essential for development. The process of solving challenges relies on sufficient resources; overcoming challenge leads to learning and development; inability to overcome a challenge heightens stress and anxiety. • Resources are variable for each individual – defined according to individual biopsychosocial-culture factors
Jarvis (2007)	• Adult learners can evaluate aspects of the learning environment that best suit their learning needs.
Lazarus (2006)	• Resources include biopsychosocial-cultural factors shaped over time and through previous experience. • Resources shape how a person appraises the significance of an event according to his or her own wellbeing. Lazarus refers to this as the relational meaning of the event to the individual.

	White and Malkus (2019)	Ingram and White (2020)	White and Sangster (2022)	White and Ingram (2023)
4. Organismic Sub-systems - **Motivation,** - **Behaviour,** - **Feeling states**	The teacher's engagement with teaching maths was externally motivated by her awareness of the end of term state tests.	Students' motivation, behaviours, and feelings interact according to their appraisals of three interpersonal factors: communication,	Motivation is linked to students' interpersonal interactions (long screen time suggests shift from intrinsic motivation to	Affect orientations, or felt meanings provide insight into the interactions of motivation and behaviour. Students experience an

			connectedness, and supports.	external motivation)	array of positive and negative affect states during their study.
		The teacher felt anxious teaching maths.

As the teacher enacted new practices, her feelings became positive (excited and happy), motivations (internal), and behaviours (increased social interaction) changed.

The teacher demonstrated increased sense of competence through environmental mastery. | Students' feelings reflect how other subsystems (motivation, behaviour) are implicated.

Students are motivated and engaged when through materials, social, and relational connections. | Students' agentic behaviours inform motivation and positive emotion responses (ie – flexible access to resources, self-pacing, accessing tutor support). | The positive emotions suggest awareness about 'self' – proud, empowered, and grateful.

Negative emotions implicate intrapersonal and interpersonal states: worry, self-doubt, isolated, distressed |

Relevant Research Reviewed and Perspectives Summarised	
Lazarus (1991)	• Cognition, emotion, and motivation are interdependent systems, and their distinctive qualities inform human adaptation. Emotion operates as a super-ordinant system.
Jarvis (2005)	• Human learning is a whole person process – including mind (knowledge, skills, values, attitudes, emotions) and body (biologic, genetic, physical) engaged in interpersonal transactions from which the experience is processed cognitively, emotively, and/or practically into meaning.
Dirkx (2008)	• Adult learning is an emotion laden experience
Tyng et al. (2017)	• Long-lasting negative feelings disorientate attention from learning to the source of stress, impeding decision making and memory.
Illeris (2018)	• Human learning relies on the interactions of motivation, emotion, and cognition.
Ryan and Deci (2020)	• Intrinsic motivation is reliant on autonomy, competence, and relatedness. External controls based on rewards and punishment undermine intrinsic motivation; intrinsic motivation is a foundation for life long-learning
• Autonomy support and structure are factors that contribute to internal motivation.
• Behaviour and feeling states interact with motivation

| **Intra Personal Factors** | **Personal Characteristics**

- Values/Beliefs | **White and Malkus (2019)** | **Ingram and White (2020)** | **White and Sangster (2022)** | **White and Ingram (2023)** |
|---|---|---|---|---|---|

		The teacher's beliefs about early years instruction conflicted with the instructional approaches she used to teach mathematics. External pressure to meet state testing requirements challenged the teacher's confidence and identity as an early year's pedagogue.	Students who are pursuing study as a life-long aspiration experience a sense of joy and excitement to supports coping during the transition to study. Cost savings, access to quality resources (wi-fi, library, kitchen space) elicit feelings of gratitude and shape students identity through belonging.	Students value feedback that is directive and lecturers who are engaging. This informs their motivation and elicits positive emotion responses.	Student identity is influence by intercultural interactions; it impacts emotions and cognitive functioning through its influence on confidence.
	- Prior Learning (Histories?) - Confidence - Identity				
	Relevant Research Reviewed and Perspectives Summarised				
	Ryan and Deci (2017)	• Autonomy reflects an individual's active choice and volition and is what informs capacities for flourishing, reflecting relatedness to others, control and competence. (p. 621) • When a person acts to bring a long-held interest to fruition, it is indicative of their personal autonomy; alternatively, a restriction of personal autonomy can have negative implications to depression and feelings of despair (p. 583)			
	Stets and Trettevik (2014)	• Emotions shape identity. How we think others see us invokes emotion responses that influence identity formation.			
Inter Personal Factors	**Environment Qualities**	**White and Malkus (2019)**	**Ingram and White (2020)**	**White and Sangster (2022)**	**White and Ingram (2023)**
	Connectedness - Social, material, relational **Supports** - needs supports	The teacher's perception of self is shaped by her reflections on instructional approaches – how they align or conflict with her own value systems and their utility in meeting the children's needs.	Students rely on role-related relationships for needs support. Group identity informs a social solidarity that acts as a resilience factor (a resource for coping during periods of	Students report family and peer supports are the greatest resource for overcoming periods of stress during study. Quality of interpersonal interactions (example: time online, use of the chat box,	Emotion responses are shaped by quality of interpersonal interactions.

		heightened stress) Ineffective supports, including poor quality feedback, can negatively impact sense of self.	organisation of the VLE, communications, can be facilitative or debilitating - impacting motivation, behaviours, feelings).	

Relevant Research Reviewed and Perspectives Summarised

Ryan and Deci (2017)	• Needs supportive practices promote positive, trusting relationships, leading to a positive sense of autonomy (p. 359)
Boyns (2006)	• "The self has an intrinsically emotional foundation." (p. 254) • Interpersonal processes are central to the verification and salience of identities and provide the emotion context for an individual's conception of 'self' (p 273) • Feelings are attached to an individual's conception of self and these feelings drive identity processes.
Turner (2006)	• Needs to verify self, inform individual motivations, behaviours, and feeling states. Three layers of self: core self, sub-identities (multiple roles in daily life: family, work, school), role identities – who we wish to be in a given situation. High salience means high emotion with core self in a vulnerable position to either be confirmed or disconfirmed, resulting potentially in a heightened emotion response.
Sluss and Ashforth (2007)	• Identity is shaped according to three levels of self: the independent and autonomous individual; through role-related relationships; and through group membership.
Smith and Mackie (2015)	• Interpersonal relationships have a role in emotion generation and regulation.

Wellbeing	Wellbeing Capacities - Coping - Competence - Autonomy - Environmental Mastery - Sense of purpose - Self-actualisation	**White and Malkus (2019)**	**Ingram and White (2020)**	**White and Sangster (2022)**	**White and Ingram (2023)**
		The Affective Instructional Tool provided the material connection to promote a sense of teacher competence. The Affective Instructional	Four fifths of PGT students experience average to high wellbeing. Half report never or rarely having energy to spare and a quarter	Almost three quarters of PGDE students express average to high wellbeing. One third of PGDE students report rarely or never having	Positive feeling states reflect positive wellbeing and negative feeling states signal a potential threat to wellbeing.

		report rarely feeling relaxed. Overwhelmingly, students report Being interested in new things.	energy to spare, being able to relax, and feeling confident. Nearly three quarters of PGDE students report often or all of the time being interested in other people. Over half of PGDE students report often or all the time feeling loved.	
	Tool provided the material and social connection to promote a sense of environmental mastery			

Relevant Research Reviewed and Perspectives Summarised

Ryff (1989)	• Ongoing personal growth is necessary for achieving optimal psychological functioning and requires an individual to be open to experience; this defines an ongoing commitment to developing and becoming. • Wellbeing is described as a state of being, optimally experienced through gaining: autonomy, environmental mastery, positive relationships, realisation of potential, self-acceptance, sense of purpose.
Keyes and Annas (2009)	• Wellbeing is composed of psychological, social, and emotional symptoms. The presence or absence of these symptoms is indicative of an individual's mental health.
Dodge et al. (2012)	• Wellbeing is best understood as a state of equilibrium influenced according to person-environment interactions. • Wellbeing will fluctuate during periods of perceived challenge as an individual navigates demands vs resources in an attempt to resolve the challenge.
Diener et al. (2017)	• Subjective Wellbeing is defined according to an individual's sense of satisfaction in life and affect experiences.
Seligman (2012)	• Theory of the building blocks of wellbeing: Wellbeing is a state defined by positive emotion, engagement, positive relationships, meaning in life, and sense of accomplishment.
Ryan and Deci (2017, 2020)	• Self Determination Theory proposes healthy development/wellness is dependent upon fulfilling three basic psychological needs: autonomy (an individual's sense of ownership and initiative in interactions); competence (a sense of

Bio-ecological Systems Engaged	Systems - Microsystem - Mesosystem - Exosystem - Macrosystem - Chronosystem	White and Malkus (2019)	Ingram and White (2020)	White and Sangster (2022)	White and Ingram (2023)
		having potential – to grow and succeed); relatedness (connectedness and belonging).			
		(Micro) Teacher-child interactions shape the teacher practice and learning environment. (Exo) State mandated tests influence the teacher's experience teaching mathematics. (Macro) Prior experiences shaped through time influenced the teacher's instructional approach.	(Micro) Tutor, lecturer, advisor of studies, peer, library, IT support, student services inform the person-environment interactions. (Meso) Module design engages programme leads, IT services, Library services, and module leaders. (Exo) Programme structure is defined at an institutional level. (Macro) students who arrive to Dundee and access new technologies, library services – different cultural experiences impact emotion response. The transition to study is defined by participants as 'overwhelming'.	(Micro) feedback, lecturer presence, flexible access to materials all inform participant experiences. (Meso) Inconsistent organisation of the module space became a constraint for participants. (Exo) Programme structure was dictated by the COVID -19 restrictions.	(Micro) peer relationships; tutor and lecturer relationships promote positive student emotions. (Meso) participants express worry over finances and the constraints to daily life. (Macro) Culture shapes person-environment interactions. For one participant cultural differences led to a breakdown in communication with negative impact to the emotion experience. For another participant cultural difference improved the learning environment, introducing varied perspectives and experiences.

Relevant Research Reviewed and Perspectives Summarised	
Kleop et al (2009)	• Human Development Model • The resources accessible to each individual to address challenges is variable, and ever-changing through the life course; they are defined according to each individual's bespoke biopsychological characteristics, and social-cultural contextual conditions that define the environments within which they persist.
Bronfenbrenner (2006)	• Features of the developing person can be defined according to four interacting components: (1) the developmental process engages the person-environment relationship; (2) person characteristics including biological, emotional, cognitive, and behavioural; (3) the context, or systems within which the individual directly interacts or is impacted by the interactions of others; (4) Time as a factor in the changes that occur across the life span (p.
Ward et al. (2015)	• Culture shock can negatively impact interpersonal relationships; defined as a resistance or • inability of different cultures to interact positively within a microsystem.
Bird (2017)	• Intercultural understanding, prior learning, and life histories shape the student experience, influencing transition to study and shaping social and personal interactions that have implications to academic identity formation and engagement with learning.
Jindal-Snape and Rienties (2016)	• Chronosystem-level events are whole of life fluctuations or changes defined as transitional events involving inter and intrapersonal processes and interactions across various systems with implications to human development.

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Co-authorship Form 1

The University of Dundee Division of Education and Society PhD by Publication

Assignation of Authorship Form: Verifiable account of contribution to published works.

Title of article: Teacher emotion matters: Bridging teacher learning and mathematics instruction in the early years using an affective instruction design.

White, W., & Malkus, A.J., (2019) Teacher emotion matters: Bridging teacher learning and mathematics instruction in the early years using an affective instruction design. *Teacher Education Advancement Network*, 11(4). https://ojs.cumbria.ac.uk/index.php/TEAN

Authorship	Name	Percentage
First author	Wendee White	90%
Second author	Amy Malkus	10%

Brief Description of role/output activity:

The concept for writing emerged from the first author's masters research project. The first author led the literature search, drafted the outline, constructed the initial draft, revisions, and final version of the article. The second author supervised the master's thesis that informed the writing and advised on the final version of the article.

Other information: N/A

First Author (signature): Wendee White   Date: 10.04.23

Second Author (signature): Amy Malkus   Date: 10.05.23

Co-authorship Form 2

The University of Dundee Division of Education and Society PhD by Publication

Assignation of Authorship Form: Verifiable account of contribution to published works

Title of article: Student emotion matters: Understanding and responding to taught postgraduate student experience through the lens of wellbeing.

Authorship	Name	Percentage
First author	Wendee White	90%
Second author	Richard Ingram	10%

Brief Description of role/output activity:

The first author and second author agreed the concept for the research and article. The second author led the literature search, drafted the outline, constructed the initial draft, revisions, and final version of the article. The first author read and advised on the revised, and final version. The second author recommended the journal to submit to. Both authors agreed on the final version prior to submission.

Other information: N/A

First Author (signature) : Wendee White   Date: 10.04.23

Second Author (signature):   Richard Ingram   Date 31/5/23

1   **Co-authorship Form 3**

2

3   The University of Dundee Division of Education and Society PhD by Publication

4

5   **Assignation of Authorship Form: Verifiable account of contribution to published works**

6

7   **Title of article:** Embracing the complexity: a multifaceted and inter-sectional model of
8   Taught Postgraduate student experience

9

10   White, W., & Ingram, R. (2021). Embracing the complexity: a multifaceted and inter-
11   sectional model of Taught Postgraduate student experience. *Journal of Further and Higher*
12   *Education.* DOI: 10.1080/0309877X.2021.1985982

13

Authorship	Name	Percentage
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15   **Brief Description of role/output activity:**

16

17   The first author and second author agreed the concept for the research and article. The first
18   author led the literature search, drafted the outline, constructed the initial draft, revisions, and
19   final version of the article. The second author read and advised on the revised, and final
20   version. The second author led on choosing the article title. Both authors agreed on the final
21   version prior to submission.

22

23   **Other information:** N/A

24

25   First Author (signature) : Wendee White   Date: 10.04.23

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27   Second Author (signature):   Richard Ingram   Date 31/5/23

28

Co-authorship Form 4

The University of Dundee Division of Education and Society PhD by Publication

Assignation of Authorship Form: Verifiable account of contribution to published works

Title of article: Exploring Wellbeing and Remote Learning Using the Delphi Method: Engaging Teacher Education Students as Co-producers of Practice

White, W. & Sangster, P. (2022). Exploring Wellbeing and Remote Learning Using the Delphi Method: Engaging Teacher Education Students as Co-producers of Practice. *Journal of Teacher Education and Educators*, 11(1), 7-32.
https://dergipark.org.tr/en/pub/jtee/issue/69772/960082

Authorship	Name	Percentage
First author	Wendee White	90%
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Brief Description of role/output activity:

The first author designed the concept and chose the research design. The first author led the literature search, drafted the outline, constructed the initial draft, revisions, and final version of the article. The second author reviewed data and supported in the analysis, read and advised on the revised, and final version of the article. Both authors agreed prior to the final submission of the article.

Other information: N/A

First Author (signature) : Wendee White   Date: 10.04.23

Second Author (signature):   Date: 19.05.23

Co-authorship Form 5

The University of Dundee Division of Education and Society PhD by Publication

Assignation of Authorship Form: Verifiable account of contribution to published works

Title of article: Embracing the complexity: a multifaceted and inter-sectional model of Taught Postgraduate student experience

White, W., & Ingram, R. (2023) Reconceptualising postgraduate taught student experience through the lens of emotions and well-being: Moving from explanatory methodology to revelatory. *International Journal of Educational Research*, *117*, 102135. https://doi.org/10.1016/j.ijer.2022.102135

Authorship	Name	Percentage
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Second author	Richard Ingram	10%

Brief Description of role/output activity:

The first author and second author agreed the concept for the research and article. The first author led the literature search, drafted the outline, constructed the initial draft, revisions, and final version of the article. The second author read and advised on the revised, and final version. The second author led on choosing the article title. Both authors agreed on the final version prior to submission.

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