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Department of Education, University of Oxford

Conceptualising teacher resilience: A comparative systematic multidisciplinary review of teacher resilience literature

Miguel Subosa

A dissertation submitted to the University of Oxford

in partial fulfilment of the requirements of the degree of

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Abstract

Background – Substantive research into teacher resilience has focused on a variety of individual and contextual factors that hinder or help teachers to overcome challenging situations in the exercise of their profession. Rooted primarily in psychological theories, extant teacher resilience literature has largely focused on personal dispositions, social relations, and school processes, with little attention to cultural and structural factors that affect teachers' work. Comparative, cross-country analysis has also been limited.

Purpose – This systematic review aims to conceptualise teacher resilience based on empirical literature regarding three countries (the Philippines, United Kingdom, and United States), as well as appraise the breadth and quality of the evidence base.

Methods – A systematic review was conducted to identify relevant articles based on pre-defined eligibility criteria. The following databases were searched: Education Resources Information Center (ERIC), British Education Index (BEI), PsycINFO, Scopus, and Web of Knowledge. Identified articles were analysed via thematic synthesis and appraised for methodological quality using the Mixed Methods Appraisal Tool (MMAT).

Findings – The thematic synthesis revealed a multi-dimensional framework of teacher resilience, incorporating four dimensions: personal, social, organisational-institutional, and cultural-structural. The cultural-structural dimension was the least examined among the four dimensions. The review also demonstrated gaps pertaining to the geographical distribution of the articles, population of interest, and sub-sectoral coverage (i.e., early childhood care and education, primary, secondary, tertiary, technical and vocational, non-formal). These results were discussed in relation to the research questions and possible areas for future enquiry.

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Even as a child, I had the fortune to be taught by many inspiring teachers. I have remained in contact with some of these teachers. To this day, they continue to encourage me, and for this, I wish to express my gratitude. I was not always the best student in high school, but they believed in me nonetheless. It is my hope that this research serves even as a small recognition of their hard work, since too often, the long-lasting impact of committed teachers on their students goes unacknowledged.

I wrote this dissertation amidst challenging times – during the onslaught of the COVID-19 pandemic – and my friends, both new and old, helped me get through it.

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Finally, I dedicate this dissertation to my family: my sisters Dara, Bia, and Gela, and to my parents – my first teachers – Lou and Rico.

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List of Abbreviations

BEI	British Education Index
COVID-19	Coronavirus disease
ECCE	Early childhood care and education
ERIC	Education Resources Information Center
EU	European Union
FIMLE	Full information maximum likelihood estimation
IIEP	International Institute for Educational Planning
MMAT	Mixed Methods Appraisal Tool
NEO-PI-R	Revised Neuroticism-Extraversion-Openness Personality Inventory
NFE	Non-formal education
OECD	Organisation for Economic Co-operation and Development
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
RCT	Randomised controlled trial
SSCI	Social Sciences Citation Index
TVET	Technical and vocational education and training
UK	United Kingdom
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNEVOC	International Centre for Technical and Vocational Education and Training
UNICEF	United Nations Children's Fund
US	United States

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Introduction

In the wake of large-scale disruptions to education systems around the world caused by the coronavirus (COVID-19) pandemic, educational bodies have shown renewed interest in the resilience of learners, teachers, and education systems. For instance, the United Nations Educational, Scientific, and Cultural Organization (UNESCO), International Institute for Educational Planning (IIEP-UNESCO), and United Nations Children's Fund (UNICEF) have published policy guidance on how education systems can 'build back resilient', following the pandemic (UNICEF, 2020; UNESCO & IIEP-UNESCO, 2021). The Organisation for Economic Co-operation and Development (OECD, 2020) has also released a report describing the impact of COVID-19-related educational disruptions on the well-being of young people, while also providing policy advice on how governments could mitigate the detrimental effects of such disruptions on young people's mental health.

However, while resilience has sparked more conversation in the education sector over the past year, interest in this phenomenon is not new to researchers. One of the first investigations of human resilience was published in 1974 and studied 'psychologically invulnerable' children (Anthony, 1974). Conceptions of resilience have since evolved – favouring contextually influenced understandings instead of individual dispositions.

In education, resilience is most frequently studied in the context of children, but teacher resilience remains a common area of interest. Interest in teacher resilience mostly stems from its influence on teacher well-being. Given high attrition rates in the teaching profession, research on teacher resilience also explores how it influences retention. Teacher development programmes have also begun incorporating resilience into their curricula.

Mirroring developments in broader resilience theory, teacher resilience studies have shifted their focus from identifying individual attributes to exploring contextual factors that build resilience. Trait-based understandings of resilience have been largely abandoned in favour of contextually situated explanations. However, since studies of teacher resilience are primarily anchored on psychological resilience theories, the former exhibits similar conceptual and methodological issues as the latter.

While widely studied – and perhaps because it is so widely studied – resilience remains conceptually nebulous. Luthar et al. (2000) noted the lack of a unified operational definition for resilience and other associated phenomena, like vulnerability. In addition, different measures have been used to quantify resilience outcomes (Luthar et al., 2000). These observations still hold true today (Liu et al., 2020), and have become more complicated with the emergence of similar constructs, such as grit, hardiness, and psychological capital. The cultural specificity of resilience adds further complexity (Ungar, 2008).

This study is partly motivated by a desire to help clarify the concept of teacher resilience. Hence, this systematic review explores how teacher resilience is conceptualised across three countries: the Philippines, United Kingdom (UK), and United States (US). By focusing on three countries, I aim to attend to cultural specificities that might appear in the literature.

However, my interest in teacher resilience is not purely intellectual. Having previously been a teacher in an under-resourced school, I am no stranger to teacher resilience narratives. I have seen how resilience is used to distract attention from structural inequities that impede education – political institutions instead choosing to blame teachers and students for their ‘inability’ to succeed despite the odds.

Therefore, this investigation also pays attention to structural factors that influence teacher resilience.

Specifically, this research seeks to answer the following questions:

- How is teacher resilience conceptualised in educational literature regarding the Philippines, UK, and US between the years 2010 and 2020?
    - Which individual and contextual factors are associated with teacher resilience?
- What is the breadth and quality of the evidence base on teacher resilience in the Philippines, UK, and US between the years 2010 and 2020?
    - In which vulnerable communities do scholars study teacher resilience?
    - At which educational sub-sectors does the literature examine teacher resilience (i.e., early childhood care and education [ECCE], primary, secondary, tertiary, technical and vocational education and training [TVET], non-formal education [NFE])?
    - What methodological approaches have been used to investigate teacher resilience?

This enquiry proceeds in four chapters. Chapter 1 surveys substantive literature on resilience theory and traces its historical development. Afterwards, it explores how developments in broader resilience theory have influenced educational understandings of resilience, and more specifically, teacher resilience. In surveying

the extant literature, I highlight conceptual and methodological gaps and explain how my research intends to address them.

Chapter 2 outlines my methodology. I begin by describing the systematic review process, followed by the selection criteria used for my review. Next, I discuss my analytical approach, highlighting how I will integrate findings from studies using different methodological approaches. This is proceeded by an explanation of the framework used to critically appraise studies included in this review. This chapter ends with a reflection on my own subjectivities and how they could influence my analysis.

In Chapter 3, I present my findings and situate them vis-à-vis previous teacher resilience research and the broader evidence base on resilience theory. Furthermore, I examine the limitations of my findings and evaluate the methodological credibility of the studies from which my findings were drawn.

Chapter 4 closes this enquiry by summarising the contribution of this review to the teacher resilience literature and to broader resilience theory. In doing so, I also identify potential areas for future research.

Chapter 1: Background and Related Literature

This chapter begins by tracing the historical development of resilience theory. This is followed by a discussion of how these developments in broader resilience theory have influenced views on teacher resilience. Afterwards, this chapter exposes gaps in the teacher resilience literature and articulates how this research will address them. It closes with a statement of the research questions.

1.1 Theories of resilience

Modern understandings of human resilience derive from psychology and psychiatry (Fleming & Ledogar, 2008). Interest in resilience accompanied the said disciplines' desire to expand enquiry beyond pathological human behaviour, towards also exploring behaviours that promote well-being (Richardson, 2002). For instance, Garmezy (1991, 1993) noted how earlier studies of children at risk took an epidemiological lens: there was wide understanding of risk factors but little exploration of factors that enabled positive adaptation. Barnard (1994) acknowledged how clinicians tended to pathologise individuals at risk, remarking how 'so much of our pathological focus is geared toward the past, in contrast to a focus on elements of resiliency and the future' (p. 143).

Psychological conceptions of resilience have since evolved. Masten and Obradović (2006) mapped out the historical development of resilience research in three waves:

1) phenomenological identification of risk and protective factors;
2) uncovering the underlying mechanisms of resilience development; and
3) studying how interventions and policies influence resilience.

These developments are discussed in the next sub-sections.

1.1.1 Historical development of resilience research

1.1.1.1 First wave: identifying protective factors

In response to critique regarding the portrayal of children at risk as dysfunctional, the first wave of resilience research sought to identify factors that enabled vulnerable children to adapt positively to their circumstances. Rutter (1987) described how life experiences and socio-environmental support mechanisms could serve as protective factors that mitigated the impact of risk on an individual. Egeland et al. (1993) stressed the importance of emotionally responsive caregiving in childhood as a protective factor against developing maladaptive behaviours in later life. The Kauai Longitudinal Study, a landmark research project that followed a cohort of children in Hawaii from ages 1 through 32, noted how the presence of dispositional, familial, and community-level protective factors in the earlier life of high-risk youth related to their successful adaptation as adults (Werner, 1993). This aligned with what Garmezy (1991) described as the protective triad: individual personality traits, supportive family environment, and external social support.

However, while these phenomenological studies could identify *which* factors influenced resilience, they did not describe *how* those factors helped individuals respond resiliently to adverse circumstances. In addition, these earlier studies depicted resilient individuals as exceptional – possessing extraordinary traits that made them invulnerable to risk (Masten, 2001). Anthony (1974), for example, sought to identify the unique characteristics of ‘psychologically invulnerable’ children. Furthermore, they failed to agree on what resilient outcomes looked like. These were critical research areas that developed during the second wave of resilience research.

1.1.1.2 Second wave: describing resilience mechanisms

Building on the work accomplished in the first wave, second-wave researchers attempted to explain how risk and protective factors interact to develop resilience (Masten & Obradović, 2006). For instance, Flach (1998) described resilience as a process of psychological disruption and eventual reintegration of resultantly acquired skills into an individual's coping strategy. Luthar et al. (2000) proposed a two-pronged conception: 'positive adaptation within the context of significant adversity' (p. 1). Rutter (2006, 2012) endorsed a similar view, postulating that resilience resembled a 'steeling' effect brought about by previous stressful experiences. These conceptions implied that resilience could not exist without exposure to risk.

Kumpfer (2002), focusing on adolescents at risk, attributed resilience development to bidirectional interactions between a child's internal (psychological) resources and their environment. Contesting exceptionalist conceptions of resilient children as 'psychologically invulnerable' (Anthony, 1974), Masten (2001) characterised resilience as an ordinary phenomenon naturally generated by basic human adaptive systems: protecting these systems leads to the development of healthy coping mechanisms when faced with adversity.

Adopting a clinical lens, Bonanno (2005) described resilience as the most common response to trauma and differentiated it from recovery – the latter manifesting as moderate to severe increases in psychopathological symptoms, followed by a gradual return to the pre-trauma state, and the former, as a relatively mild disruption and a stable pattern of healthy functioning. In contrast, echoing earlier criticism of research on individuals at risk, Miller (2003) argued that resilience research continued to fixate on individuals in psychopathological life trajectories,

admonishing that resilience ‘must be more than just whether or not a person has major life disturbances as a consequence of negative life events’ (p. 244).

Later researchers have expressed interest in the neurobiological bases of resilient behaviour – enquiries enabled by technological developments in neuroscience (Southwick et al., 2014). For instance, some studies have attempted to identify the neurochemical bases of resilient behaviour while still acknowledging the influence of socio-environmental factors (Feder et al., 2009; Russo et al., 2012). This interplay underpins the biopsychosocial approach forwarded by Davydov et al. (2010). Culture is one socio-environmental factor identified as a contributor to resilience development.

The role of culture. Increasingly, researchers have emphasised heterogeneity in how resilience manifests: resilience is culturally and temporally embedded (Ungar et al., 2007; Ungar, 2013; Masten, 2014; Southwick et al., 2014). While resilience has universal themes, it also has culturally and contextually specific elements (Ungar, 2008). As Motti-Stefanidi (2018) articulated, ‘culture permeates the way resilience… is defined, evaluated, and explained in different countries and cultural systems’ (p. 107). For instance, differences in the acceptability of emotional disclosure, the importance of cultural rituals, or the role of religion and spirituality in everyday life also mean differences in the way resilience is expressed and understood across cultures (Buse et al., 2013).

In Aboriginal communities, for example, resilience narratives are intertwined with historico-cultural trauma (Fleming & Ledogar, 2008; Kirmayer et al., 2011). Gallo et al. (2009) highlighted the contribution of strong familial relations, religiosity, and collectivistic attitudes to resilience outcomes in Latin American populations. In

Southeast Asian societies, the cultural values of shame and collectivism are salient in resilience development (Hechanova & Waelde, 2017).

However, despite widespread theoretical acknowledgement of culture's role in resilience development, a systematic review by Raghavan and Sandanapitchai (2021) revealed that, while many studies focused on resilience mechanisms in ethnically diverse populations, few of them provided a meaningful discussion of how culture influenced resilience mechanisms. That said, one must caution against understanding culture solely along ethnic or racial lines.

Firstly, race and ethnicity are variably conceptualised across different societies (Rocha & Aspinall, 2020). For instance, while ethnic diversity is well-documented in the political systems of the UK and US – and even then, through different classification schemes (see Aspinall, 2020; Herman, 2020) – the Philippines has little documentation of its ethnic and cultural diversity, instead favouring the construction of a singular Filipino identity, in the interest of national integration (Hara & Celero, 2020). This is despite comparable levels of cultural diversity in the Philippines and UK, according to Fearon's (2003) metrics.

Secondly, while ethnicity is a predictor of cultural values, the former's predictive power over the latter is weak (Desmet et al., 2015). Examining cultural similarities based on race is even less sound: there are more within-group than between-group differences within racial 'categories' (Betancourt & López, 1993; Nagel, 1994). For instance, even if Filipino and Japanese people are both categorised as Asian, and might even converge on certain cultural values, they are nonetheless shaped by different political and historical contexts. This does not discount the presence of intercultural similarities in understandings of resilience, but

examining those shared meanings should be done without resorting to oversimplification.

Indeed, second-wave resilience research offered a rich theoretical exploration of resilience and its enabling mechanisms, which subsequently prompted the implementation of resilience interventions. The third wave of research examined the effectiveness of those interventions.

1.1.1.3 Third wave: Studying resilience interventions and policies

Even as the second-wave exploration of resilience development mechanisms continues, a third wave of resilience research emerged nonetheless, which sought to implement and evaluate resilience interventions (Masten & Obradović, 2006). Resilience-building interventions have been studied across different populations, including but not limited to children at risk (e.g., Nickolite & Doll, 2008; Hodder et al., 2011; Gillig et al., 2019), communities affected by crisis (e.g., Wolmer et al., 2011; Hechanova et al., 2016; Meza, 2018), and carers of vulnerable individuals (e.g., Noone & Hastings, 2009; Kinman & Grant, 2016; Rosenberg et al., 2019).

Given the theoretical roots of resilience, an overwhelming majority of resilience interventions employ psychological approaches. Systematic reviews and meta-analyses revealed that resilience interventions primarily use a combination of psychotherapeutic techniques, such as cognitive-behavioural therapy and mindfulness (Joyce et al., 2018; Liu et al., 2020). While resilience interventions differ in their respective approaches, conducting such interventions suggests acceptance of the notion that resilience is responsive to treatment, and therefore, malleable. Understanding of the mechanisms enabling resilience, which was furthered by second-wave resilience research, laid the groundwork for these interventions.

However, operational definitions of resilience in these intervention studies remain ambiguous (Liu et al., 2020). This ambiguity, which has persisted through the three waves of resilience research, highlights a need for conceptual clarification. For instance, is resilience an outcome in and of itself, or is it an intermediate outcome that must be developed to generate improvements in broader aspects of well-being? If it is the latter, what improvements in well-being should be observed as a consequence of developing resilience? This same ambiguity finds itself in educational scholarship about resilience.

1.2 Resilience in education

The educational literature on resilience largely examines students – and unsurprisingly so. Since childhood experiences show an association with resilience outcomes in later life (Werner, 1993; Egeland et al., 1993; Doll & Lyon, 1998), educational institutions have become a prime site of interest for resilience researchers.

Enquiries into student resilience mirror the three-wave theoretical development of resilience research discussed in Section 1.1. Like the first wave of broader resilience research, earlier student resilience studies also sought to identify risk and protective factors. Scholars identified various individual characteristics, family-level factors, and school factors (e.g., McMillan & Reed, 1994; Catterall, 1998; Jackson & Martin, 1998; Schoon et al., 2004) that protected against the risk generated by exogenous factors such as poverty, familial dysfunction, or violence in the community (e.g., Jackson & Martin, 1998; Schoon et al., 2004; Dass-Brailsford, 2005).

Succeeding studies, like the second wave of wider resilience research, examined how these factors interacted to build learners' resilience (e.g., Morrison &

Allen, 2007; Peck et al., 2008; Nickolite & Doll, 2008; Downey, 2008). Mirroring psychological conceptualisations of resilience, educational resilience scholars have endorsed an ecological view, highlighting the interplay of individual and contextual factors in resilience development (e.g., Théorêt, 2006; Morrison et al., 2006; Morrison & Allen, 2007; Downey, 2008). As such, educational research also portrays resilience as malleable.

Hence, much research has attempted to improve resilience outcomes by implementing and evaluating interventions, tested primarily through experimental research designs. Randomised controlled trials (RCTs) are a popular methodology, with scholars examining the impact of resilience interventions on psychopathological outcomes like illicit substance use, psychological distress, or incidence of mental illness (e.g., Hodder et al., 2011; Dray, Bowman, Campbell, Freund, Hodder et al., 2017; Galante et al., 2018; Pluess et al., 2017). Systematic reviews of resilience interventions have also mainly focused on their impact on students' mental health and psychological well-being (e.g., Dray, Bowman, Campbell, Freund, Wolfenden et al., 2017; Fenwick-Smith et al., 2018). This is unsurprising, given resilience theory's psychological and psychiatric origins.

However, a broader systematic review of child resilience studies revealed the same conceptual ambiguity found in the wider field of resilience research. Gartland et al. (2019) reported that child resilience studies measured the said construct in different ways – for example, via psychometric resilience scores, academic achievement outcomes, or occurrence of mental illness symptoms. Therefore, despite extensive enquiry into student resilience, important differences remain in its operationalisation. These differences also appear in the literature on teacher

resilience, which, while less studied than student resilience, remains a significant area of interest in educational resilience research.

1.3 Teacher resilience

The literature on teacher resilience identifies various personal and contextual factors that contribute to resilience development. Earlier research has focused on teachers' personal attributes and their immediate environment as sources of resilience, discussing, for instance, how perceptions of self-efficacy, coupled with support from colleagues and from school leadership, served as sources of resilience (Howard & Johnson, 2004; Brunetti, 2006). Hansen (1994) also posited how a sense of vocation – feeling 'called' to effect moral change through one's profession – was a sustaining force for teachers. Scholars also speak about the importance of teacher preparation programmes, highlighting how they build resilience through peer support, explicit instruction, and mentoring (Le Cornu, 2009). These formal and informal support structures are considered critical, especially in developing early-career teachers' resilience (Théorêt et al., 2006; Papatraianou & Le Cornu, 2014).

In line with these notions, Mansfield et al. (2012, 2014) conceptualised teacher resilience multi-dimensionally, describing it as an interplay of emotional, motivational, social, and organisational dimensions. In an enquiry into early-career teacher resilience, S. J. Johnson et al. (2014) proposed a five-pronged framework of resilience development that encompassed policies and practices, factors related to teachers' work, school culture, and teacher identity. These conceptions reflect an ecological view of teacher resilience – that is, it is an interplay of personal competencies, social support, and organisational factors.

Teacher resilience could then be imagined as a state of homeostasis between risk and protective factors in the individual and their environment; exhaustion resulted

from protective factors being overwhelmed by risk factors (Leroux & Théorêt, 2014a, 2014b). Therefore, teacher resilience is seen as malleable: personal characteristics and contextual factors interact to develop teacher resilience (Dworkin, 2009; Mansfield et al., 2012). This view of teacher resilience as malleable aligns with conceptions forwarded by second-wave resilience researchers like Masten (2001), Kumpfer (2002), and Rutter (2006, 2012).

Indeed, an ecological view of teacher resilience that accounts for both individual and contextual factors has become the mainstream approach to understanding the said phenomenon. This ecological view advocates a more holistic understanding than the phenomenological enquiry into risk and protective factors that characterised early resilience research. However, some scholars argue that this mainstream ecological approach still paints an incomplete picture.

A. Price et al. (2012) described teacher resilience as a neoliberal discourse: a means to ‘enable overworked employees to cope with the pressures placed on them… [with] no attempts to change or resist the pressures (adversities) of the workplace’ (p. 84). As such, teacher resilience sprang forth from the managerialisation of education (A. Price et al., 2012). For instance, Dworkin (2009) drew a relationship between high-stakes testing (as a form of accountability) and teacher burnout. Flores (2020) attributed risk to changing work conditions: increasing workload, bureaucratisation, and precarity.

In sum, mainstream conceptions of teacher resilience tend to be reductionist and hyper-individualist, looking only at teachers and their immediate environment, without regard for their broader cultural, historical, and politico-economic context (B. Johnson & Down, 2013). They ignore the increasing precarity within the teaching

profession, brought about by institutional regimes such as casualisation and deprofessionalisation (A. Price et al., 2012).

This critique of dominant teacher resilience discourses is mirrored in critique of broader resilience research. Davis (2014) asserted that popular conceptions of resilience ‘favors notions of personal responsibility’ (p. 6). Webster and Rivers (2019) noted how resilience discourses framed ‘an intervention in our self [as the only way] to navigate the dangerous seas of the contemporary world’ (p. 531). Disregard of broader structural factors depoliticises resilience and obscures how risk and vulnerability are generated by systemic inequities (Olsson et al., 2015; Park et al., 2020). After all, structural inequalities along social, political, and economic lines shape relations between groups and individuals within a society (Blau, 1977), and educational institutions can reflect, even reproduce, these inequalities (Bourdieu, 1970). While mainstream conceptions of teacher resilience purport to be ecological, they seem to omit a large portion of the ecosystem beyond the school.

In addition to this reductionism and hyper-individualism, B. Johnson and Down (2013) observed that resilience research tends to represent a monolithic, middle-class, Euro-American notion of resilience. Thus, they advocated a closer examination of cultural influences on teacher resilience, since doing so would help unpack how structural forces shape teacher identity (B. Johnson & Down, 2013).

The cultural and the structural cannot be divorced: they mutually influence each other (Schooler, 1996). For instance, societies that place a premium on individual responsibility will construct systems reflecting that ethos. Similarly, structural regimes, if allowed to persist long enough, can modify cultural norms and behavioural patterns (Schooler, 1996). Moreover, the prevalence of a monolithic, Euro-American notion in resilience research might itself be due to structural factors:

after all, social research generated in low- and middle-income countries remains peripheral to research generated in high-income countries (Demeter, 2019).

Research that considers cultural and structural influences on teacher resilience remains sparse. A systematic review conducted by Mansfield et al. (2016), which included teacher resilience research from 2000 to 2014, revealed that teacher resilience literature focused on personal, social, and organisational resources, coping strategies, and resilience outcomes. An earlier systematic review by Beltman et al. (2011) reported similar results: existing literature largely ignores the impact of broader structural factors outside schools in the development of teacher resilience.

One limitation of these previous systematic reviews was their failure to account for other constructs similar to resilience. Given the conceptual ambiguity of resilience and the proliferation of possibly equivalent constructs, a systematic review of teacher resilience should strive to incorporate or rule out those equivalences. This would ensure that the maximum amount of pertinent data is considered when theorising teacher resilience.

1.3.1 Conceptual disambiguation

Identifying homogeneous constructs is essential to ensuring theoretical clarity and parsimony in social research (Strauss & Smith, 2009). Nonetheless, redundant constructs with similar theoretical definitions and high observed correlations proliferate in the social sciences (Le et al., 2010). This is a longstanding problem in educational research, with Kelley (1927) coining the term ‘jangle fallacy’ – thinking that empirically identical constructs are distinct simply because they have different names. Hence, conducting this systematic review necessitates inspection of other constructs that are potentially identical to resilience.

1.3.1.1 Hardiness

Hardiness is a personality trait introduced by Kobasa (1979), who conceptualised the said trait using a three-factor structure: commitment, control, and challenge. Hardy individuals draw on their commitment, control, and challenge as resources to resist stress-induced physical illness (Kobasa, 1979; Kobasa et al., 1982). Like resilience, the study of hardiness originates from psychopathology, with early scholars like Maddi (1967) observing either powerless or agentic behaviours in different individuals in response to societal pressures.

According to Wiebe (1991), hardiness is associated with higher frustration tolerance – that is, persistence despite difficulty. It is related to a reduction in negative affect and maladaptive response to stress (Wiebe, 1991) and an increased tendency towards adaptive coping mechanisms (Williams et al., 1992). Given these conceptions, hardiness already appears identical to resilience. This apparent identicality is substantiated by extant literature on hardiness and resilience.

Empirically examining the construct validity of different psychometric hardiness scales, Funk (1992) reported that the Dispositional Resilience Scale is a more robust instrument that captured all the elements of hardiness. However, as previously established, resilience is not a trait and therefore does not equate to hardiness. Hardiness can therefore be viewed as one personality dimension of resilience (Florian et al., 1995). Thus, hardiness is only one of several pathways to resilience (Bonanno, 2004; Maddi, 2005).

The identicality of hardiness and resilience is further corroborated by the relationship of the former with other variables that show similar associations with resilience. Hardiness is negatively associated with psychological distress and positively associated with social support (Eschleman et al., 2010). Its relationship

with stress response is mediated by personal characteristics, such as coping style and self-efficacy, and contextual variables (Delahaij et al., 2010).

1.3.1.2 Psychological capital

Like resilience, psychological capital is an offspring of the positive psychology movement (Luthans et al., 2004). According to Luthans et al. (2004), psychological capital is comprised of four dimensions: confidence (or self-efficacy), hope, optimism, and resilience. In the context of psychological capital, resilience refers to an individual's ability to cope with work-related stressors (Luthans et al., 2006).

Similar to modern conceptions of resilience in broader research, resilience as a dimension of psychological capital can be facilitated by reconfiguring the work environment or training an individual (Luthans et al., 2006). In other words, psychological capital – and by extension, its resilience dimension – is malleable and thus susceptible to intervention (Avey et al., 2006; Youssef & Luthans, 2009; Luthans et al., 2010).

Youssef and Luthans (2009) and Avey (2014) identified various antecedents of psychological capital: individual characteristics (e.g., personality, life experiences), organisational factors (e.g., organisational culture, leadership), and person-organisation interactions (e.g., person-job fit, person-organisation fit). It is positively associated with employee well-being (Avey, Luthans, Smith, et al., 2010), job satisfaction (Larson & Luthans, 2006) and job performance (Luthans et al., 2007; Peterson et al., 2011), is negatively associated with intentions to quit (Avey, Luthans, & Youssef, 2010), and moderates the relationship between job stress and antisocial workplace behaviour (Roberts et al., 2011).

1.3.1.3 Grit

Duckworth et al. (2007) defined grit as ‘passion and perseverance for long-term goals’ (p. 1087). It manifests in ‘working strenuously toward challenges, maintaining effort and interest over years despite failure, adversity, and plateaus in progress’ (Duckworth et al., 2007, pp. 1087–1088). This construct possesses a two-factor structure: consistency of interest and perseverance of effort (Duckworth & Quinn, 2009).

On initial inspection, grit and resilience appear to be the same constructs. However, Duckworth insists on their distinctness. According to Duckworth, resilience – or persistence despite adversity – is only part of grit; consistent interests sustained over time also constitute grit (Perkins-Gough, 2013). This implies that grit is a superordinate construct that includes resilience as one of its facets. However, psychometric examinations of grit demonstrate that the converse is true: resilience is the superordinate construct.

For instance, Abuhassàn and Bates (2015) reported that grit’s consistency facet – which is touted by Duckworth as being what distinguishes grit from resilience (Perkins-Gough, 2013) – is already accounted for by existing facets of the Conscientiousness domain in the Revised Neuroticism-Extraversion-Openness Personality Inventory (NEO-PI-R), or the Five-Factor Model of Personality. On the other hand, the perseverance domain is psychometrically distinct, with unique factor loadings beyond the NEO-PI-R (Abuhassàn & Bates, 2015). Credé et al.’s (2017) meta-analysis also found that perseverance is a distinct construct from consistency, putting grit’s two-factor structure, and consequently, its construct validity into question.

Given these findings – that is, perseverance is a distinct univariate construct and that consistency is already accounted for by other psychometric constructs – grit does not seem to offer a unique empirical contribution beyond that already captured by resilience. Godkin (2020) confirmed this assertion, demonstrating that grit is psychometrically indistinguishable from resilience. J.B. Price (2019) proposed a superordinate General Resiliency Factor that includes both grit and hardiness amongst its dimensions.

1.3.1.4 Self-efficacy

Self-efficacy refers to an individual's judgement of their ability to successfully react to a given circumstance (Bandura, 1977). It is closely related to resilience in that it has similar relationships with correlates of resilience. For instance, like resilience, self-efficacy has been found to mediate student achievement (Zimmerman, 2000). Self-efficacious teachers were also found to be more effective in promoting student learning (Bandura, 1993). Teachers with higher levels of self-efficacy also showed greater persistence in the face of challenging instructional situations (Gibson & Dembo, 1984). In addition, Skaalvik and Skaalvik (2010) demonstrated an inverse relationship between teacher self-efficacy and burnout.

However, despite similar correlates, resilience and self-efficacy are distinct constructs. Firstly, self-efficacy pertains exclusively to a belief about oneself; resilience might encompass beliefs about oneself as well, but behavioural adaptation is indispensable to resilience. Someone might believe themself to be resilient, but their resilience ultimately manifests through a behavioural response. Secondly, while self-efficacy helps an individual cope with stressors, it exists independent of stressors (Schwarzer & Warner, 2013). On the other hand, resilience only exists in the presence of stressors (Luthar et al., 2000; Rutter, 2006). As such, this study

considers self-efficacy to be sufficiently different from resilience and instead identifies the former as a potential protective factor in teacher resilience development, in agreement with Rutter (1987) and Werner (1996).

The conceptual disambiguation accomplished above offers an expansion on previous systematic reviews. This disambiguation, alongside other theoretical considerations discussed in the next section, bolsters the significance of this study.

1.4 Significance of this study

This literature review has revealed gaps in the research regarding teacher resilience. Firstly, existing systematic reviews do not examine the sub-sector coverage of extant teacher resilience literature. This is important since the teaching profession extends beyond formal and compulsory education. Furthermore, teachers at various phases of education and different levels of formality face specific challenges that are not always shared across sub-sectors. For instance, according to the UNESCO International Centre for TVET (UNESCO-UNEVOC, 2005, 2012), teachers in TVET institutions deal with external industry partners and manage work skills programmes – both of which demand skills that differ from those required in compulsory education. NFE also has different resource constraints and delivery models, compared to formal education (Carron & Carr-Hill, 1991). Therefore, I aim to examine the available teacher resilience literature pertaining to all educational sub-sectors: ECCE, primary, secondary, tertiary, TVET, and NFE.

Secondly, little attention has been accorded to the types of vulnerable communities studied in the teacher resilience literature. Since vulnerability is a concept inseparable from resilience (Luthar et al., 2000), the epistemology of vulnerability informs the epistemology of resilience. Furthermore, identifying the

communities of interest in teacher resilience research could reveal if there are populations that remain under-examined. Thus, I aim to identify the communities of interest in teacher resilience literature: in which contexts of vulnerability (e.g., poverty, rurality, remoteness, exposure to natural disasters) do researchers investigate teacher resilience?

Thirdly, there has been no examination of the methodological approaches currently being employed in teacher resilience literature since Beltman et al.'s (2011) systematic review. A full decade has passed since then; identifying methodologies currently in use will not only provide information about potential approaches available to researchers but it will also reveal the prevailing modes of enquiry. For instance, experimental and mixed-methods research were largely under-represented in Beltman et al.'s (2011) review; it would be interesting to see if this still holds true. Hence, I seek to examine the methodological approaches used by teacher resilience scholars.

In addition, previous systematic reviews failed to account for redundant constructs, as discussed in Section 1.3.1. This is a methodological gap, given frequent construct redundancy in social science research (Le et al., 2010). Failing to account for constructs synonymous to teacher resilience limits the evidence base from which data may be drawn. This curtails the objective of a systematic review: to synthesise and evaluate the full diversity of available evidence that is relevant to the research question (Evans & Benefield, 2001). Due to the theoretical and empirical similarities of hardiness, grit, and psychological capital with resilience, my review incorporates the three said constructs as keywords in my database search.

Furthermore, including the Philippines as a country of interest addresses a geographical gap in the teacher resilience literature. While resilience is often

theorised in relation to poverty (Béné et al., 2014), it is more commonly associated with natural hazards in the Philippine context. This is reflected in the body of resilience research regarding the Philippines, which overwhelmingly focuses on community resilience, following a natural disaster (see, for example, Uy et al., 2011; Hechanova et al., 2015; Walch, 2018; Baybay & Hindmarsh, 2019). Of course, I do not discount the interplay of poverty and exposure to natural disasters in creating risk; I make this observation only to underscore a difference in the theoretical basis for understanding resilience in the Philippine context.

Given this disproportionate interest in disaster resilience, resilience in the Philippine educational context remains under-theorised. It is for this reason that I included the Philippines as a country of interest in this systematic review. The large evidence base on teacher resilience from the UK and US could potentially provide rich insight, which I could then use as a springboard to theorise about teacher resilience in the Philippine context.

Nevertheless, I recognise that, like most social phenomena, resilience is a process experienced across all societies; the differences lie in its behavioural manifestations, which are culturally influenced (Buse et al., 2013). As such, my analysis will accord attention to any such differences reported across American, British, and Filipino teacher resilience literature.

1.5 Summary and research questions

The literature on teacher resilience reflects the conceptual ambiguity found in the broader body of resilience research. While there appears to be agreement about teacher resilience being an ecological process, and consequently, its susceptibility to personal and contextual influences, existing scholarship still offers only a myopic view.

Cultural and structural factors are largely disregarded by enquiries into teacher resilience. Furthermore, the sub-sectoral coverage of teacher resilience literature remains unexamined. This is an important question that, if answered, could also reveal broader epistemological insight regarding the teaching profession – that is, who is considered a teacher and where can teaching occur? In addition, there has been no enquiry into how vulnerability is conceptualised in extant teacher resilience literature; this is another epistemological question that warrants a response.

These gaps are reflected in previously implemented systematic reviews. This present review seeks to answer questions that previous reviews have not addressed. Moreover, this present review attempts to cover a wider theoretical base by including teacher resilience literature that investigates similar constructs like hardiness, psychological capital, and grit. Furthermore, by limiting my review to teacher resilience literature regarding three countries, I aim to pay closer attention to cultural differences – if they are at all considered by the literature included in the review. The Philippines, UK, and US were chosen as the countries of interest, given the under-theorisation of teacher resilience in the Philippines, in contrast to the wider evidence base pertaining to the UK and US. Finally, this present study serves as an updated review, given that the most recent systematic reviews I found cumulatively examined teacher resilience literature published between 2000 and 2014.

Thus, this present systematic review aims to answer the following research questions:

- How is teacher resilience conceptualised in educational literature regarding the Philippines, UK, and US between the years 2010 and 2020?
    - Which individual and contextual factors are associated with teacher resilience?

- What is the breadth and quality of the evidence base on teacher resilience in the Philippines, UK, and US between the years 2010 and 2020?
    - In which vulnerable communities do scholars study teacher resilience?
    - At which educational sub-sectors does the literature examine teacher resilience (i.e., ECCE, primary, secondary, tertiary, TVET, NFE)?
    - What methodological approaches have been used to investigate teacher resilience?

Chapter 2 explains the process by which this study will respond to these questions, while also underscoring important methodological limitations.

Chapter 2: Methodology

This chapter presents the methods I undertook to implement this systematic review. It begins with an exploration of the underpinning principles of a systematic review and then outlines its procedure. Afterwards, I enumerate the eligibility criteria for article inclusion and describe my search strategy. This is followed by an explanation of my analytical approach, highlighting how I intend to integrate findings of studies following different methodological traditions. Next, I describe the critical appraisal framework used to evaluate the studies included in this review and provide my rationale for selecting said framework. Finally, I lay out my positionality and explore how it could influence my analysis.

2.1 Approach

A systematic review is a form of literature review that '[adheres] closely to a set of scientific methods that explicitly aim to limit systematic error (bias), mainly by attempting to identify, appraise, and synthesize all relevant studies… in order to answer a particular question (or set of questions)' (Petticrew & Roberts, 2006). Systematic reviews differ from other forms of literature review in that they seek to survey and appraise the full diversity of evidence (Evans & Benefield, 2001) – as opposed to narrative reviews, which potentially allow the researcher to disregard studies that are of little methodological interest to them (Davies, 2000; Andrews, 2005). Surveying a wide body of evidence is important since different studies exploring similar subjects can generate conflicting findings for reasons other than authorial bias or methodological flaw (Petticrew & Roberts, 2006) – like contextual differences, for instance. Moreover, systematic reviews seek to answer an explicit research question; this is not necessarily the case with narrative reviews, which could

simply aim to present the scholarly discussion around a given subject (Evans & Benefield, 2001).

Newman and Gough (2020) underscored two logics that could guide the systematic review process: aggregative or configurative. Aggregative reviews seek to measure the impact or effectiveness of an intervention by testing hypotheses, usually by employing statistical meta-analytical techniques, while configurative reviews aim to enrich conceptual understanding of a phenomenon by exploring and interpreting underlying patterns (Newman & Gough, 2020). In attempting to better understand the conceptualisation of teacher resilience in the Philippines, UK, and US through extensive surveying of substantive literature, my systematic review follows a configurative logic.

Given the exhaustive nature of systematic reviews, they can identify areas of uncertainty and question spurious certainties in the existing evidence base (Petticrew & Roberts, 2006). Andrews (2005) alluded to the 'ground-clearing' function of systematic reviews: they identify knowledge gaps while subjecting existing knowledge to close methodological and theoretical scrutiny. Furthermore, he asserts that 'in studies that do not undertake systematic reviews, gaps can be rhetorically manufactured to justify the case for new research' (Andrews, 2005, p. 413). While systematic reviews do not claim to eliminate authorial subjectivity or to portray an 'objective' account of the truth, they actively seek to minimise bias (Andrews, 2005).

In sum, systematic reviews are characterised by their comprehensiveness, their objective (i.e., answer a research question), and their attempt to minimise bias. These characteristics reflect in the systematic review components identified by Evans and Benefield (2001):

- an explicit research question;
- transparent search methods;
- an exhaustive literature search;
- clear inclusion and exclusion criteria;
- criteria to assess the quality of included studies;
- joint reviewing to reduce bias; and
- clearly stated review findings.

As such, I incorporated these components in this present review – except for joint reviewing.

A second independent review is necessary to minimise bias in a systematic review (Evans & Benefield, 2001). However, given time and resource constraints, and the nature of this dissertation as a single-author project, this study did not include a second review. This is an important limitation of this research.

It must be noted that systematic reviews have also seen their share of criticism from the academic community. For instance, they have been critiqued as being a positivist attempt to disregard context in favour of generalisation and for being overly dependent on experimental and quantitative research (MacLure, 2005; Hammersley, 2020). That said, these critiques likely stem from the misconception that systematic reviews can only be used for RCTs (Petticrew, 2001). While it has been observed that qualitative research tends to be ignored by systematic reviewers (Dixon-Woods et al., 2001), this speaks less about the nature of systematic review as a methodology and more about the persistence of methodological prejudice within the research community (Hodkinson, 2004). In fact, Cochrane recognises the value of qualitative research in elucidating how interventions work, how different contextual factors might affect outcomes, or how stakeholders perceive an intervention (Noyes

et al., 2021). Sharing this acknowledgement of the value of qualitative research, I incorporate both qualitative and quantitative research in this systematic review.

Having established the principles undergirding this study, I lay out my review process, which followed the steps enumerated by Newman and Gough (2020):

1) Formulating the research question
2) Identifying the selection (i.e., inclusion and exclusion criteria)
3) Developing the search strategy
4) Selecting the studies
5) Coding the studies
6) Appraising the studies
7) Synthesis

This systematic review process is outlined in the protocol found in Appendix A.

In line with Page et al.'s (2021) guidelines, this protocol includes administrative information (e.g., review title, author, registration details), study background (e.g., objectives, rationale), and methodological details (e.g., selection criteria, search strategy, critical appraisal framework). This protocol was first written in April 2021 and was progressively revised before beginning the literature search. It was finalised in June 2021.

2.2 Selection criteria

I used the selection criteria in Table 1 to identify studies that will be included in this systematic review. These selection criteria were finalised in June 2021, before commencing the literature search.

Table 1. Selection criteria

	Basis for inclusion	Basis for exclusion	Rationale
Type of publication	• The article appears in a peer-reviewed journal or in a conference proceedings document. • The article reports findings based on an analysis of primary data.	• The article does not appear in a peer-reviewed journal or in a conference proceedings document. • The article reports findings based on an analysis of entirely secondary data (e.g., systematic reviews, meta-analyses).	Peer-reviewed journal articles are the primary source of data in systematic reviews since they provide the most detailed information regarding research methods and findings (T. Li et al., 2021). Furthermore, the accessibility of journal articles via public electronic databases makes it possible for future researchers to replicate the search process. While reporting of methods and results in conference documents is more variable in detail and accuracy (G. Li et al., 2017), the critical appraisal incorporated in this present review would allow me to weigh findings reported in conference documents against the broader evidence base. Only articles that report findings based on primary data have been

			included since this study aims to generate a conceptualisation of teacher resilience as studied in empirical research.
Language of publication	• The article is written in English.	• The article is written in a language other than English.	English remains the lingua franca of research and higher education (Björkman, 2013). While this has been problematised as limiting knowledge generation to Anglophone research communities (Collyer, 2018), this is less pronounced in the Philippines, where English is the de facto language of academic publishing (Symaco, 2017). While educational research productivity in the Philippines is indeed relatively low, this is not due to language but to a low representation of Philippine journals in the Social Sciences Citation Index (SSCI) and limited research support from the government (Vinluan, 2012).

Period of publication	• The article was published between the years 2010 to 2020.	• The article was published before 2010 or after 2020.	The last systematic review of teacher resilience that incorporated an examination of methodological approaches was published ten years ago (Beltman et al., 2011) and included literature from 2000 until its year of publication. A succeeding systematic review by Mansfield et al. (2016) did not report on methodological approaches. As such, this systematic review, in part, serves as an update on previous reviews.
Topic	• The article pertains to resilience and includes teachers as at least one of its units of analysis. Studies that pertain to teacher resilience, but also examine student	• The article does not pertain to resilience and does not include teachers as at least one of its units of analysis. For example, studies that refer exclusively to	Since this systematic review focuses on teacher resilience, the eligibility criteria screen against research that does not examine the said topic. However, it included literature that pertained to teacher resilience alongside the resilience of other educational stakeholders (such as students or school leaders), as long as the study made

	resilience, for instance, were included in the review.	student resilience were excluded from the review.	distinctions between factors enabling resilience in teachers versus other stakeholders.
Country of interest	• The article covers at least one of the following countries: the Philippines, UK, or US.	• The article does not cover any of the following countries: the Philippines, UK, or US.	Including geographical criteria would allow me to pay attention to potential cultural differences in teacher resilience that are identified in the included literature. Since teacher resilience is under-theorised in the Philippines, as discussed in Chapter 1, I have chosen it as the third country of study alongside the US and UK, where teacher resilience is more widely examined.

2.3 Search strategy

I searched the following electronic databases: Scopus, PsycINFO, Web of Science, the Education Resources Information Center (ERIC), and the British Education Index (BEI). These five databases were chosen since they cover a broad range of literature not only in education but also in psychology and other social sciences. All data examined in my review came from articles sampled from these databases. I used the search terms indicated in Table 2 below.

Table 2. Search terms

Conceptual keywords		Population keywords
resilien* OR persever* OR grit OR "psychological capital" OR psycap OR katatagan OR "difficult circumstance*" OR "difficult situation*" OR "challenging circumstance*" OR "challenging situation*"	AND	teach* OR instructor* OR professor* OR educator*

In accordance with the guidelines prescribed by Lefebvre et al. (2021), the search terms indicated in Table 2 were identified in consultation with content experts at the University of Oxford. I performed trial searches on the aforementioned databases; this allowed me to refine my search string. I progressively modified search terms, aiming to identify as many pertinent studies as possible while also excluding impertinent ones from the search results.

For instance, the *instructor**, *professor**, and *educator** search terms were included in the search string to ensure that the systematic review would include

articles pertaining to teaching professionals from all education sub-sectors. On the other hand, terms such as *stress* and *burnout* were excluded from the search string since they inflated the resulting number of articles, with a large portion of the studies pertaining to causes of distress among teachers, but not how they coped with distress. *Katatagan* was included in the search string to potentially include publications that refer to the indigenous Filipino counterpart construct for resilience, '*katatagan ng loob*' (see Tiangco, 2005). This counterpart construct has been applied in the delivery of psychosocial disaster resilience interventions in the Philippines (see Hechanova et al., 2015, 2016; Hechanova & Waelde, 2017).

Note as well that, while my review focuses on the Philippines, UK, and US, my search string did not include geographical limiters (e.g., *philippine**, *"united states", "united kingdom"*). Geographical limiters were purposely excluded from the string to avoid excluding pertinent articles that omit the country of study from the title or abstract. As such, following title and abstract screening, I manually excluded articles that did not pertain to any of the aforementioned countries or that did not mention their place of study.

I performed the database search from 8th to 17th June 2021, which yielded 5,690 articles across all five databases. Full text was not available for 38 articles, which resulted in their exclusion. As such, I exported 5,652 articles to Zotero. After this, I cleaned up the exported article set, deleting a total of 111 duplicate articles. This initial clean-up resulted in a total of 5,541 articles subjected to screening based on the selection criteria outlined in Section 2.2.

Before continuing, it is important to note the low representation of Philippine journals in research databases. Only one educational research journal (the Asia-Pacific Education Researcher) based in the Philippines is indexed by the SSCI

(Vinluan, 2012). An additional two Philippine social science journals – one on political science and another on migration studies – are SSCI-indexed (Tecson-Mendoza, 2015). This under-representation stands in contrast with the fact that, in Southeast Asia, the Philippines publishes the largest number of local social science journals (18) listed in UNESCO's directory of social science periodicals (Narvaez-Berthelemot & Russell, 2001).

Therefore, a more extensive search of teacher resilience literature regarding the Philippines would also survey these local journals. However, since articles published in these journals are not systematically catalogued in a research database, it would be impossible to perform such a search without adding a significant amount of arbitrariness to the process, thereby reducing the replicability of this search. Since systematic reviews must be replicable (Tugwell et al., 2020), I decided against conducting a manual search of Philippine social science journals. This is an important limitation of this enquiry.

2.4 Study selection

As recommended by Lefebvre et al. (2021), study selection proceeded in two phases: (1) a title and abstract screening followed by (2) a full-text screening. In the first phase, I read through each article's title and abstract and excluded articles that did not correspond to the selection criteria described in Section 2.2. However, as previously mentioned, I did not yet exclude articles that made no reference to their country of study in their title or abstract.

Following title and abstract screening, 365 articles were retained for full-text screening. Afterwards, I read the full text of these remaining articles and assessed them again based on the selection criteria laid out in Section 2.2. Full-text screening

resulted in the inclusion of 110 articles. Using Microsoft Excel, I encoded the title, author, publication date, and journal for each article.

2.5 Data coding and analysis

T. Li et al. (2021) defined data as ‘any information about or derived from a study, including details of methods, participants, setting, context, interventions, outcomes, results, publications, and investigators’. According to them, the reviewer should decide which kinds of data they will extract from the included studies before the actual process of data extraction.

Since this review sought to answer questions regarding the quality, methodology (i.e., population studied, concerned educational sub-sector, and research methods used), and results (i.e., individual and contextual factors identified as relating to resilience) of the included studies, data extraction focused on those elements. The Cochrane Collaboration’s (n.d.) data extraction tool was the primary basis for the data extraction tool used in this systematic review. I built this tool in Microsoft Excel spreadsheet format for easy access and later analysis.

This systematic review poses a methodological challenge in that it seeks to integrate findings obtained through a wide range of quantitative and qualitative research methods. While data extraction is generally straightforward for quantitative studies, this process is often more iterative when dealing with qualitative studies (Noyes et al., 2021). There is little formalisation of analytical and reporting methods in qualitative research, which makes it more difficult to extract data from qualitative studies (Dixon-Woods et al., 2001; Lucas et al., 2007).

Scholars have proposed different ways to approach this issue. Dixon-Woods et al. (2001) referred to two approaches: (1) numerical coding of qualitative results and (2) developing a meta-ethnographic narrative. However, they also mentioned

that this ‘pooling’ of results from qualitative studies creates an epistemological dilemma: it undermines the context-bound nature of qualitative research (Dixon-Woods et al., 2001). Alternatively, Harden and Thomas (2005) proposed the conduct of separate analyses of quantitative studies and qualitative studies before developing an analytical synthesis. They recommended a thematic synthesis, guided by a pre-defined theoretical framework, to extract results from the included qualitative studies (Thomas & Harden, 2008).

Building on these recommendations, Lucas et al. (2007) described a thematic synthesis that integrates the findings of both quantitative and qualitative research, in lieu of separate analyses. Pluye and Hong (2014) called this a convergent qualitative synthesis: quantitative data are analysed qualitatively by transforming them into themes. This form of thematic synthesis is most useful when analysing a body of research that investigates a large variety of outcomes and uses different systems of measurement (Ryan et al., 2018), which is the case with teacher resilience. As such, this systematic review employs this integrative approach to thematic synthesis.

However, it must be noted that not all themes can be defined in advance – the researcher will inevitably extract inductive themes (Harden & Thomas, 2005). Furthermore, themes do not just ‘emerge’ from an epistemological vacuum: theme extraction is an interpretive decision made by a researcher (Elliott, 2018; Braun & Clarke, 2019), and as such, thematic synthesis introduces a significant amount of subjectivity into the review process (Harden & Thomas, 2005).

Thomas and Harden (2008) outlined the following steps in conducting a thematic synthesis:

1) Line-by-line coding
2) Organising line-by-line codes within a hierarchical coding structure

3) Interpreting analytical themes

The thematic synthesis conducted for this systematic review follows this process.

I began by uploading each included article into NVivo. Afterwards, I coded their respective results, discussion, and conclusion sections using the codebook provided in Appendix B. The coding process was simultaneously inductive and deductive. Deductive codes were derived from previous teacher resilience studies and the wider literature on resilience theory, as discussed in Chapter 1.

To make this process more transparent, the codebook includes a column indicating whether each code was pre-defined based on literature or identified inductively, in line with the recommendation of Fereday and Muir-Cochrane (2006). This codebook also illustrates the hierarchical structure I developed to organise the codes. Finally, I derived themes based on this hierarchical structure, which I report in the narrative synthesis found in Chapter 3. This synthesis integrates findings from both quantitative and qualitative studies.

2.6 Critical appraisal

Critical appraisal of included studies is an indispensable component of systematic reviews (Petticrew & Roberts, 2006). According to Petticrew and Roberts (2006), the appraisal process should assess each study's methodological adequacy and freedom from bias. In this systematic review, I used the Mixed Methods Appraisal Tool (MMAT; Hong et al., 2018) as my critical appraisal framework. Several frameworks exist for the purpose of critical appraisal in systematic reviews, but most of them provide separate, often disparate, appraisal frameworks for different research methods (Pace et al., 2012). The use of separate appraisal frameworks could result in a disjointed appraisal that would be difficult to report in an integrative synthesis. The MMAT offers a cohesive framework that lends itself well to the

integrative analysis pursued by this systematic review. MMAT criteria are shown in Table 3.

Table 3. MMAT criteria (Hong et al., 2018)

Study design	Methodological appraisal criteria
All designs	• Clear research question(s) • Data collected responds to the research question(s) *Further appraisal may not be appropriate or feasible if the above criteria are not met.*
Qualitative	• Qualitative approach is appropriate to answer the research question(s) • Data collection methods adequately answer the research question(s) • Findings adequately derived from data • Interpretation of results sufficiently substantiated by data • Coherence of data sources, collection, analysis, and interpretation
Quantitative RCTs	• Randomisation is performed appropriately • Groups comparable at baseline • Complete outcome data • Outcome assessors blinded to the intervention • Participants' adherence to assigned intervention

Quantitative non-randomised	• Sample is representative of target population • Appropriate measurements of outcome and intervention • Complete outcome data • Design and analysis account for confounding variables • Intervention administered as intended
Quantitative descriptive	• Sampling strategy is relevant to answering the research question(s) • Sample is representative of target population • Appropriate measurements • Low risk of non-response bias • Statistical techniques used are appropriate to the research question(s)
Mixed methods	• Adequate rationale for a mixed methods design • Effective integration of different study components • Adequate interpretation of integrated quantitative and qualitative outputs • Divergences between quantitative and qualitative findings are adequately addressed • Adherence of different study components to standards of quantitative and qualitative research traditions

I must also note that, while positionality is not included as a criterion in the MMAT, I incorporated it into my appraisal of qualitative studies. After all, truthful interpretation in qualitative research depends on an acknowledgement of how the researcher's subjectivities inform how they make sense of their data (Bourke, 2014; Berger, 2015). Given this, I also recognise my own subjectivities.

2.7 Positionality

Grounding myself on the extant resilience literature, my analysis took an ecological lens, surfacing risk and protective factors at the individual and contextual levels. This analytical lens indicates my rejection of the trait conceptualisation of teacher resilience: teacher resilience is malleable and subject to the influence of factors intrinsic and extrinsic to the individual. However, while my analysis aligns with the prevailing ecological lens, I actively pay attention to cultural and structural factors, which, as established in Chapter 1, are largely under-examined. This is influenced by my own experience with resilience discourses.

My experience with resilience discourses is, in large part, rooted in my Filipino identity. Following a natural disaster – a frequent occurrence in the Philippines, given its geographical location – Filipinos are often commended for their resilience. Previously, as a psychology undergraduate in the University of the Philippines, I would volunteer in emergency psychosocial interventions and disaster relief efforts targeted at communities affected by natural calamities. Indeed, I admired the resilience of my fellow Filipinos, but I also decried the State neglect that put Filipinos in a position where they must constantly rely on their resilience.

Moreover, I have first-hand experience with teacher resilience discourses. Having taught in an under-resourced school in a low-income suburb of Paris, I have seen how resilience is used to divert attention away from protracted government

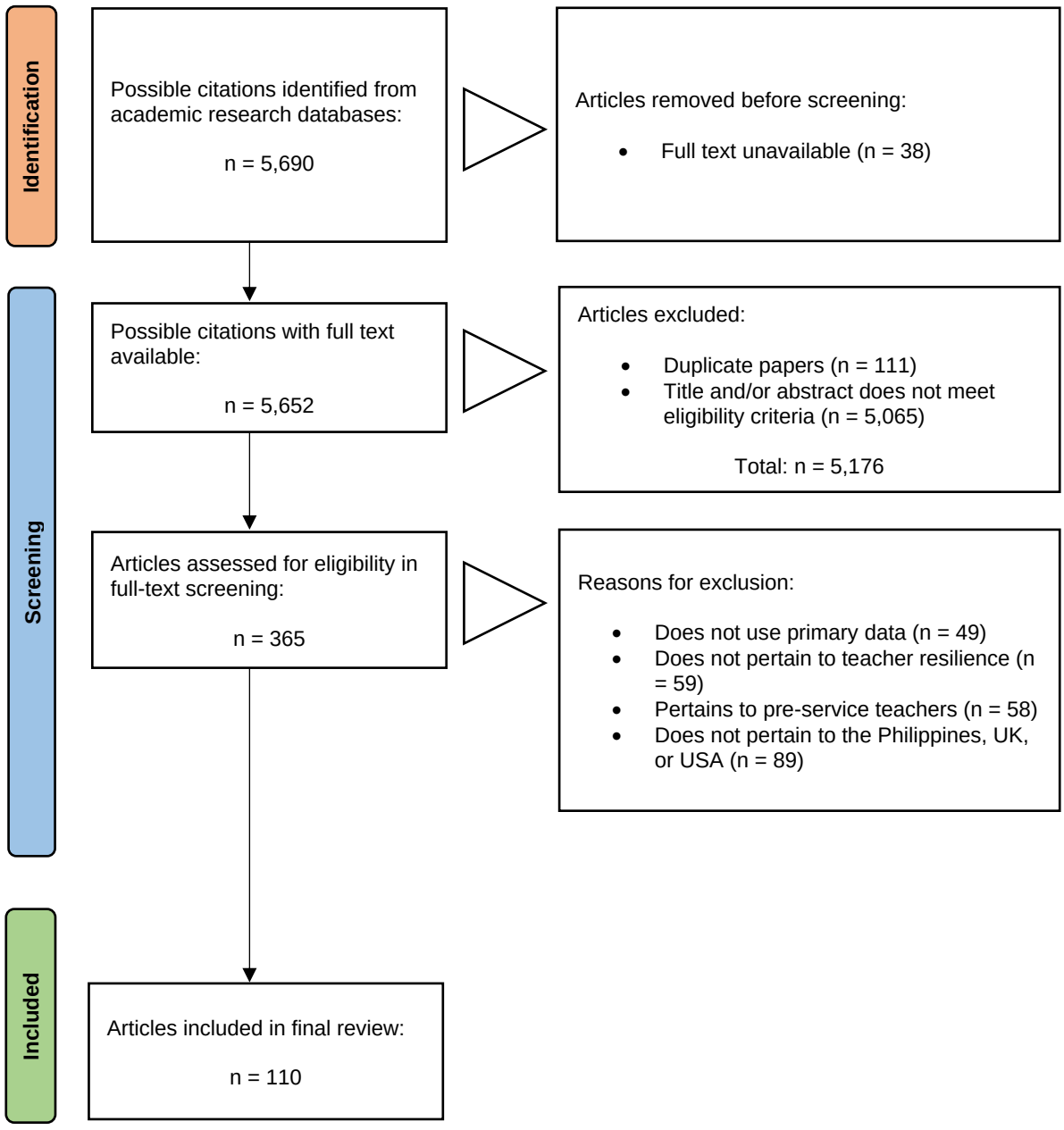
neglect of disadvantaged populations. Low ‘achievement’ of teachers and students in economically depressed neighbourhoods would be attributed to a lack of resilience – despite institutional factors such as inadequate material and pedagogical support or inequities in teacher deployment (Prost, 2012).

As such, my understanding of resilience is simultaneously characterised by admiration and frustration. While I celebrate the capacity of individuals and communities to overcome the odds, I struggle with the systems that stack those odds against them. These subjective positions inform the analysis laid out in the next chapter.

Chapter 3: Results and Discussion

This chapter reports the results of this systematic review. Following the procedure described in Chapter 2, a total of 110 articles were included. The full list of included articles is found in Appendix C. The selection process is summarised in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram in Figure 1, which is based on the updated guidelines provided by Page et al. (2021).

Figure 1. PRISMA diagram

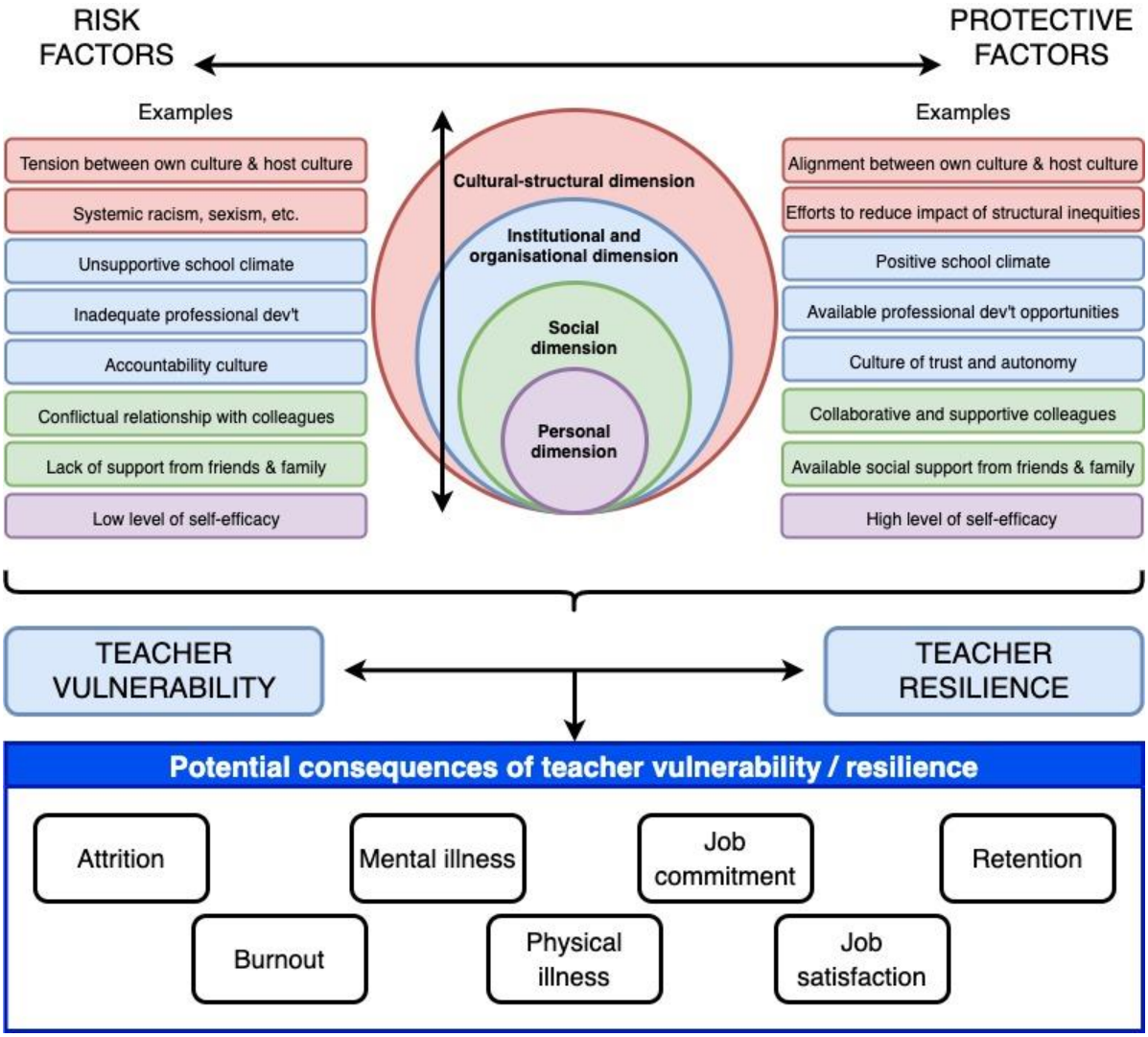


The chapter starts with an overview of the conceptual framework of teacher resilience developed through the thematic synthesis of literature included in this review. Afterwards, I discuss the themes extracted via the thematic synthesis, highlighting risk and protective factors at the individual and contextual levels. To bolster trustworthiness, I explore the conceptual limitations of this review. Subsequently, I present the different methodological approaches used by the studies included in this review and appraise their methodological quality. Finally, I situate the findings of this systematic review against the wider knowledge on teacher resilience and, more broadly, resilience theory.

3.1 Research question 1: Conceptualisation of teacher resilience

Through thematic synthesis, four dimensions influencing teacher resilience were extracted from the included articles: personal, social, organisational-institutional, and cultural-structural. Within these dimensions are specific configurations of various factors; these serve as risk and protective factors that either hinder or promote the development of teacher resilience. As such, this thematic synthesis of literature regarding the Philippines, UK, and US revealed an ecological view of teacher resilience – an interaction between personal and contextual factors. This is similar to what has been observed by previous systematic reviews (Beltman et al., 2011; Mansfield et al., 2016). A crucial difference in the framework I developed through this systematic review is the presence of the cultural-structural dimension. Figure 2 illustrates this proposed teacher resilience framework.

Figure 2. Four dimensions of teacher resilience



This multi-dimensional lens to understanding teacher resilience aligns with the frameworks espoused by Mansfield et al. (2012) and S. J. Johnson et al. (2014), both of whom highlighted similar dimensions – with the exception of the cultural-structural dimension, which remains under-examined in teacher resilience scholarship (B. Johnson & Down, 2013). I discuss the themes surfaced in this review in the next sub-sections.

3.1.1 Personal dimension

The influence of personal attributes on teacher resilience remains a prevalent theme in the included literature. Personal attributes were identified as contributory to

teacher resilience in 93 of the 110 included articles. The most salient factors within the personal dimension were personal values and motivations, personal skills and knowledge, and self-efficacy, which appeared in 48, 39, and 49 articles, respectively.

3.1.1.1 Personal values and motivations

Teachers' personal values and motivations appeared, in large part, as protective factors that buffered against stressful circumstances that teachers encounter in their work. I coded the concept of values and motivations in 48 articles. Following is a discussion of how these concepts were described in the literature.

Coded in 32 articles was how teachers' desire to make a difference in the lives of their students allowed them to overcome difficult situations. For instance, Wilkins and Comber (2015) noted how individuals who entered teaching as a second profession were motivated by a desire to make a difference – the same motivation that sustained them in their chosen second career. The same pattern was observed in long-serving teachers (McIntyre, 2010; Chiong et al., 2017). Mackenzie (2012) and Belknap and Tymans (2015) observed that teachers of children with special needs stayed in their profession because of an 'urge to serve' the said learners. Higher education professionals from ethnic minority backgrounds reported aspirations to effect systemic educational change, especially to benefit people from their respective communities (e.g., Dollarhide et al., 2018; Dvorakova, 2018; Gonzales & Terosky, 2020).

This aspiration to make a difference was related to a sense of vocation, which was coded in 27 of the included articles as being one source for sustaining teacher resilience. In speaking of vocation, I echo Hansen's (1994) notion of an inner sense of calling to effect moral change through one's profession. Literature mentioning this sense of vocation as a sustaining force characterised it as a moral mission (e.g.,

Polidore et al., 2010; Day & Hong, 2016; Dollarhide et al., 2018), inner altruistic incentive (e.g., Hong, 2012; Gu & Day, 2013; Chiong et al., 2017), or pursuit of a higher purpose (e.g., Tricarico et al., 2015; Kelly et al., 2015; Drew & Sosnowski, 2019).

Indeed, the literature surveyed in this review identifies personal values and motivations primarily as protective factors against stressors. Where these values and motivations were portrayed as risk factors, the literature spoke about either the pressure created by the pursuit of lofty ideals (Allen et al., 2017) or the inability to exercise those ideals due to other contextual factors (e.g., Belknap & Taymans, 2015; Newberry & Allsop, 2017; Nehmeh & Kelly, 2018; Ainsworth & Oldfield, 2019). These personal values and motivations also interacted with existing skills and knowledge in the development of teacher resilience, which is explored in the next sub-section.

3.1.1.2 Personal skills and knowledge

Like values and motivations, teachers' skills and knowledge were also identified primarily as a protective factor against stressors. Personal skills and knowledge were coded as a protective factor in a total of 39 articles.

The literature surveyed in this review discussed how personal skills and knowledge allowed teachers to overcome challenges faced in the exercise of their profession. These skills and knowledge might be acquired from previous professional experience (e.g., Kelly et al., 2015; Wilkins & Comber, 2015), professional development (e.g., Stoiber & Gettinger, 2011; Yonezawa et al., 2011; Post et al., 2020), or targeted resilience interventions (e.g., Jennings et al., 2011, 2013; Cook et al., 2017; Schussler et al., 2018; Lang et al., 2020). In the very few instances where personal skills and knowledge were coded as being potential risk factors, it was not

their presence, but their absence or inadequacy that created risk. As such, possessing personal skills and knowledge was portrayed exclusively as a protective factor.

While some of these articles pertained to interpersonal or instructional skills (e.g., Stoiber & Gettinger, 2011; Yonezawa et al., 2011; Rabin & Smith, 2012; Kelly et al., 2015; Kadi-Hanifi & Keenan, 2016; Carlson, 2019; Post et al., 2020), it must be noted that a significant portion pertained to psychological coping skills, such as stress appraisal or emotional regulation (e.g., Jennings et al., 2011, 2013; Cook et al., 2017; Schussler et al., 2018; Ellison & Mays-Woods, 2019; Lang et al., 2020). Given the psychological origins of resilience theory, as discussed in Chapter 1, this is unsurprising.

These personal skills and knowledge relate to another salient factor extracted in the thematic synthesis: self-efficacy.

3.1.1.3 Self-efficacy

As evidenced in 49 of the articles included in this systematic review, self-efficacy was also largely portrayed as a protective factor against stressful situations. This positive relationship between self-efficacy and resilience has long been documented by resilience scholars, with both Rutter (1987) and Werner (1993) identifying self-efficacy as a protective factor among resilient individuals. In teaching contexts, higher levels of self-efficacy have also been found to negatively correlate with burnout (Skaalvik & Skaalvik, 2010).

Most articles that identified self-efficacy as a protective factor referred to teachers' confidence in their own pedagogical competencies or their ability to adapt their approach in response to students' needs (e.g., Griffiths, 2011; Hong, 2012; Polidore et al., 2010; Belknap & Taymans, 2015; Wilcox & Lawson, 2018; Chiong et

al., 2017). Belief that one was making a difference in students' lives through teaching was another indicator of self-efficacy that contributed to resilience (Meister & Ahrens, 2011; Belknap & Taymans, 2015). Some quantitative studies identified self-efficacy as either a correlate or antecedent of resilience (Jennings et al., 2013; Cook et al., 2017; Chiong et al., 2017; Del Rosario et al., 2018).

It must also be noted how some articles referred to the presence of social and organisational support systems as enabling teachers' self-efficacy (e.g., Doney, 2013; Gu, 2014; Mintrop & Charles, 2017; Nehmeh & Kelly, 2018; Wilcox & Lawson, 2018; Del Rosario et al., 2018). This highlights the need to understand teacher resilience as an interplay of both personal and contextual factors, as previously established. Thus, the next dimensions discussed below pertain to various contextual factors identified in the thematic synthesis.

3.1.2 Social dimension

Social factors were widely recognised as having an influence on teacher resilience; I coded social factors in 87 articles. This aligns with previous resilience scholarship, which has always identified social support as one of the most important protective factors in resilience development (Rutter, 1987; Garmezy, 1991; Egeland et al., 1993; Werner, 1993; Masten, 2001; Kumpfer, 2002). Salient sources of resilience (or risk) include family and friends (17 articles), students (45 articles), and colleagues (69 articles).

3.1.2.1 Family and friends

Support from family and friends was discussed in 17 articles – few compared to other kinds of relationships, but relatively frequent nonetheless. This form of social support also appeared exclusively as a protective factor, as opposed to other types of relationships, which appeared as both risk and protective factors.

Some literature that mentioned family members as a source of resilience portrayed them either as role models that influenced teachers' identity and present resilience (e.g., Polidore et al., 2010; Kadi-Hanifi & Keenan, 2016; Dvorakova, 2018; Gonzales & Terosky, 2020). More frequently, however, they were identified as active providers of social support during challenging times (e.g., Meister & Ahrens, 2011; Doney, 2013; Maring & Koblinsky, 2013; Kadi-Hanifi & Keenan, 2016; Hughes, 2018; Gonzales & Terosky, 2020).

However, as Mrstik et al. (2019) remarked, social relations with individuals within the context of the school appeared to hold greater influence on teacher resilience than did those with individuals outside the school. I discuss these school-based relationships in the next few sub-sections.

3.1.2.2 Students

Teachers' relationship with their students held considerable influence on teacher resilience; this factor was coded in 45 articles. The nature of this relationship determined whether it was a risk or protective factor.

Literature included in the review reported that good relationships with students contributed towards sustaining teachers' passion and sense of vocation (Castro et al., 2010; Thorburn, 2011; Meister & Ahrens, 2011; Gu, 2014; C. Santoro, 2017). Furthermore, developing relationships with students helped teachers to manage their classrooms more effectively (D. A. Santoro, 2011; Gu & Day, 2013; Gu, 2014; Kelly et al., 2015; Ellison & Mays-Woods, 2019a).

The inverse is also true: unsatisfactory teacher-student relationships posed a risk to teacher resilience. Low student motivation and student apathy, despite teachers' efforts, were mentioned as sources of frustration (Turner, 2015; Richards et al., 2018). Conflictual, sometimes violent, interactions with students were also

considerable risk factors (Maring & Koblinsky, 2013; Mintrop & Charles, 2017; Curran et al., 2019; Maratos et al., 2019). As such, teacher-student relationships and their influence on teacher resilience can be viewed as a spectrum of risk versus protection.

The ability to develop positive relationships was in part related to teachers' personal values and beliefs about their students (J. Y. Hong, 2012; Gu, 2014). Studies examining the effect of targeted resilience interventions also reported how the acquisition of skills like emotional regulation and stress appraisal enabled teachers to nurture better relationships with their students (e.g., Schussler et al., 2016; Jennings et al., 2017; Schussler et al., 2018; Reiser & McCarthy, 2018; Post et al., 2020; Norton & Griffith, 2020). This interplay between teachers' values and skills and teacher-student relationships underscores the interdependence of individual and contextual factors in teacher resilience. It is also important to note that teachers' ability to respond to potentially stressful relationships with students can be influenced by their relationships with their colleagues.

3.1.2.3 Colleagues

Teachers' relationships with their colleagues are an important factor in the development of teacher resilience. This factor was coded in 69 articles – the most compared to all other factors within the social dimension. Like their relationships with students, the nature of teachers' relationships with their colleagues determined whether they were risk or protective factors.

Feelings of acceptance by colleagues helped teachers overcome challenging situations within their respective schools, especially for beginning teachers (V. Griffiths, 2011; Belknap & Taymans, 2015; Whitfield, 2019; Morrell-Scott, 2019; Morettini et al., 2020). These feelings of acceptance relate to a sense of professional

recognition, another salient theme within the social dimension. Professional recognition from colleagues and administrators was coded in 29 articles.

Professional recognition can show through acknowledgements of a teacher's expertise, expressed through colleagues soliciting their inputs on matters relating to their field of specialisation or through verbal affirmation of their performance (Meister & Ahrens, 2011; Mackenzie, 2012; Gu, 2014; Woods & Lynn, 2014; Belknap & Taymans, 2015). The perception that one's subject is valued within the school also bolsters teachers' resilience; on the other hand, feeling that one's subject is not valued poses a risk to resilience (Woods & Lynn, 2014; Richards et al., 2018, 2019; Ellison & Mays-Woods, 2019a; Wilson et al., 2020).

In addition to professional recognition, it was also noted in the literature how school colleagues could serve as communities of practice that helped teachers adapt their instructional strategies to the needs of different kinds of learners (Castro et al., 2010; Huisman et al., 2010; Meister & Ahrens, 2011; Gu, 2014; Kelly et al., 2015; Garcia & Gomez, 2017). Providing emotional support was another way by which colleagues helped protect teachers against stressors in their work environment (Huisman et al., 2010; McIntyre, 2010; Meister & Ahrens, 2011; Maring & Koblinsky, 2013; Tricarico et al., 2015; Carlson, 2019; Drew & Sosnowski, 2019). Gu and Day (2013) reported such supportive relationships with colleagues as being the most important protective factor in building teacher resilience.

Conversely, the lack of a sense of connection with one's colleagues negatively influences teacher resilience (Gu & Day, 2013). Richards et al. (2018) reported that teachers who experienced hostile interactions with their colleagues were more prone to burnout. Feelings of not being heard or respected by colleagues were also

identified as a risk factor (J. Y. Hong, 2012; Belknap & Taymans, 2015; Newberry & Allsop, 2017).

The lack of supportive relationships with colleagues could also aggravate feelings of isolation. The risk posed by feelings of isolation, coded in 21 articles, underscores the importance of social relations to the development of teacher resilience. This isolation might be ideological – one's identity or ideals being delegitimised (Dvorakova, 2018; Gonzales & Terosky, 2020; Pizarro & Kohli, 2020) – or physical – that is, limited contact with one's colleagues (Thorburn, 2011; Benjamin & Black, 2012; Mrstik et al., 2019; Ellison & Mays-Woods, 2019a). Given that relationships with colleagues could either negatively or positively influence teacher resilience, their association with teacher resilience could also be seen as a spectrum of risk versus protection.

Like other risk and protective factors in the development of teacher resilience, relationships with colleagues can also be influenced by other contextual factors. For instance, some studies of targeted resilience interventions reported increased empathy in participating teachers, which facilitated more positive relationships with their colleagues (Reiser & McCarthy, 2018; Chesak et al., 2019). Organisational factors can also shape interactions between teachers. For example, opportunities to collaborate with colleagues helped cultivate positive relationships (Douglass, 2016; Richards et al., 2018; Nehmeh & Kelly, 2018; Ellison & Mays-Woods, 2019a). I explore the organisational and institutional dimension of teacher resilience in the next sub-section.

3.1.3 Organisational-institutional dimension

Organisational and institutional factors were coded in 92 out of 110 articles. The most salient organisational and institutional factors identified in the literature are

professional development (57 articles), school leadership (60 articles), school climate and culture (50 articles), accountability (22 articles), and workload (40 articles). These factors appeared as both risk and protective factors in the development of teacher resilience.

3.1.3.1 Professional development

Professional development opportunities appeared primarily as a protective factor. Avenues for professional development were characterised in the literature as enhancing teachers' instructional competencies and self-efficacy, which in turn strengthened their resilience (Stoiber & Gettinger, 2011; Yonezawa et al., 2011; Tricarico et al., 2015; Whitfield, 2019; Wilcoxen et al., 2019; Soulen, 2020). One specific form of professional development appeared recurrently in the literature: mentorship, which was coded in 32 articles.

Being mentored and the act of mentoring others both appeared as protective factors in the literature included in this systematic review. Receiving mentorship allowed teachers to identify problems they faced in the classroom and develop solutions to address those problems (Huisman et al., 2010; V. Griffiths, 2011; Kelly et al., 2015; Wilcoxen et al., 2019; Beck et al., 2020). The social and emotional support provided by mentors was also identified as enabling teacher resilience (Belknap & Taymans, 2015; Martinez et al., 2017; Whitfield, 2019; Wilcoxen et al., 2019; Morettini et al., 2020). Mentoring colleagues, on the other hand, contributed to teachers' sense of agency or self-efficacy (Huisman et al., 2010; Yonezawa et al., 2011; Woods & Lynn, 2014; Belknap & Taymans, 2015; Hughes, 2018).

As such, professional development is mainly a protective factor; where it was coded as a risk factor, the literature referred to the absence or insufficiency of professional development opportunities. It must be noted, however, that the

availability of professional development opportunities is itself dependent on other organisational and institutional factors, which will be covered in the next few sub-sections.

3.1.3.2 School leadership

School leadership is a critical influence on school environments, which in turn influence the work of teachers. For instance, school leaders can provide (or fail to provide) avenues for teachers to learn and develop their practice. The importance of school leadership is reflected in its salience in the thematic synthesis: it was coded in 60 articles. The thematic synthesis highlighted that school leadership could be, in equal measure, either a risk or protective factor in the development of teacher resilience.

In instances where school leadership was coded as a protective factor, the teacher-leader relationship was characterised by trust and teacher autonomy (Thorburn, 2011; Meister & Ahrens, 2011; Gu & Day, 2013; Gu, 2014; Henderson et al., 2018; Richards et al., 2018; Ellison & Mays-Woods, 2019a, 2019b). The literature also referred to the presence of a unified vision communicated by the leader, towards which teachers could aspire together (Kirk & Wall, 2010; Day & Hong, 2016; Ellison & Mays-Woods, 2019b). Furthermore, teachers who felt supported by their school leadership reported principals who openly communicated with them and reacted quickly and responsively (Benjamin & Black, 2012; J. Y. Hong, 2012; Gu & Day, 2013; Morettini et al., 2020). Feelings of professional recognition by school leaders also helped to build teachers' resilience (V. Griffiths, 2011; Meister & Ahrens, 2011; Benjamin & Black, 2012; Gu & Day, 2013; Gu, 2014; Mrstik et al., 2019). In addition, supportive leadership was characterised by the provision of needed teaching resources and professional development opportunities (Benjamin & Black, 2012; Gu

& Day, 2013; Kelly et al., 2015; Wilcox & Lawson, 2018; Mrstik et al., 2019; Drew & Sosnowski, 2019).

Where school leadership was considered a risk factor, the literature referred to a lack of trust and professional recognition (Huisman et al., 2010; Benjamin & Black, 2012; J. Taylor, 2013; Wilkins & Comber, 2015; Newberry & Allsop, 2017; Ellison & Mays-Woods, 2019b; Pizarro & Kohli, 2020). Some literature portrayed actively hostile relationships between teachers and their school leaders as endangering teacher resilience (Meister & Ahrens, 2011; Martinez et al., 2017; Hirsch, 2018; Richards et al., 2018; Hughes, 2018). Lack of teacher autonomy, associated with school leaders' adherence to a broader accountability culture within the education sector, was also cited as a risk factor (McIntyre, 2010; Gu & Day, 2013; Hirsch, 2018; Richards et al., 2018; Wilcox & Lawson, 2018; O'Sullivan & Goodwyn, 2020). The lack of a unified vision for the school was also mentioned as a source of frustration for teachers (Doney, 2013; Kelly et al., 2015).

Indeed, school leadership support exerts sizeable influence on teacher resilience. This influence was quantified by Ainsworth and Oldfield (2019), who found that it was a strong contextual predictor of teacher resilience. In the same study, school climate – another organisational factor driven by school leadership – was also found to be a strong predictor of teacher resilience (Ainsworth & Oldfield, 2019).

3.1.3.3 School climate and culture

Like school leadership, school climate and culture can also, in equal measure, act as either a risk or protective factor for teacher resilience. Its importance shows in the number of times it coded in the included articles. It coded as either a risk or protective factor in 50 articles.

School climate and culture manifested in the literature as the sum of the interactions between colleagues, administrators, and organisational processes within the school. In literature that mentions school climate and culture as a protective factor, the climate was usually described as collegial – with teachers providing professional and emotional support to each other (V. Griffiths, 2011; Gu & Day, 2013; Gu, 2014; Richards et al., 2018; Mrstik et al., 2019; Ellison & Mays-Woods, 2019a, 2019b; Drew & Sosnowski, 2019; Morettini et al., 2020). The presence of a learning culture, manifested through structures like mentoring, regular feedback, and communities of practice, was also a salient description of a protective school climate (Gu & Day, 2013; Kelly et al., 2015). Perceptions of professional autonomy, accorded by both leaders and colleagues, were also a prominent theme (V. Griffiths, 2011; Wilcox & Lawson, 2018).

Like school leadership, the opposite of these features described school climates that hindered teacher resilience (D. A. Santoro, 2011; Doney, 2013; Tricarico et al., 2015; Hirsch, 2018; Richards et al., 2018; Wilcox & Lawson, 2018; Nehmeh & Kelly, 2018; Ellison & Mays-Woods, 2019b; Luthar & Mendes, 2020). Additionally, school environments characterised by violence and threats to teacher safety were also a source of risk (Maring & Koblinsky, 2013; Curran et al., 2019).

Del Rosario et al. (2018) quantitatively demonstrated how a positive school climate bolstered self-efficacy, which as previously established, is a protective factor in the development of teacher resilience. Similarly, Ainsworth and Oldfield (2019) found that school climate strongly predicted teacher resilience. Duke et al. (2020) also found a buffering effect of positive school culture against burnout.

The influence of accountability mechanisms on school climate is another important insight that arose from the thematic synthesis. As mentioned above, some

literature reported how the increasing emphasis on accountability has diminished teachers' autonomy, thus posing a risk to their resilience. Given this, I discuss accountability in the next sub-section.

3.1.3.4 Accountability

Accountability occurred exclusively as a risk factor in the literature included in this systematic review. In total, I coded accountability as a risk factor in 22 of the 112 articles.

The risk posed by an accountability culture in schools was associated with mounting pressure from school leadership to attain high test scores (Allen et al., 2017; Hirsch, 2018; Luthar & Mendes, 2020). Some articles reported how teachers felt diminishing autonomy due to increasingly prescriptive directives from educational administrators within and outside the school (D. A. Santoro, 2011; Gu & Day, 2013; Richards et al., 2018; Wilcox & Lawson, 2018; O'Sullivan & Goodwyn, 2020). In relation to these accountability-related changes, certain studies described consequent shifts in school climate (McIntyre, 2010; Newberry & Allsop, 2017; Chiong et al., 2017; Hirsch, 2018; Nehmeh & Kelly, 2018). Tensions between teachers' values – for example, student-centred learning – and the institutional thrust towards accountability were also described as a source of stress (D. A. Santoro, 2011; Belknap & Taymans, 2015; Richards et al., 2018).

Large amounts of additional workload were also mentioned as a consequence of the accountability culture within education (Kirk & Wall, 2010; Gu & Day, 2013; Wilkins & Comber, 2015; Day & Hong, 2016; Wilcox & Lawson, 2018; Damico et al., 2018). In turn, heavy workloads in the teaching profession were also mentioned as a risk factor in the literature from this review.

3.1.3.5 Workload

Like accountability, workload, which was coded in 40 articles, also appeared exclusively as a risk factor in the included literature.

The risk of heavy workloads on teachers was frequently characterised in terms of lost time for personal matters, such as familial obligations and social life (V. Griffiths, 2011; Gu & Day, 2013; Richards et al., 2018; Mrstik et al., 2019; Maratos et al., 2019; O'Sullivan & Goodwyn, 2020; Gonzales & Terosky, 2020). Literature reported how the accumulation of different responsibilities outside classroom teaching, such as pastoral tasks and administration of extra-curricular activities, led teachers to feel that their work controlled their personal schedules (V. Griffiths, 2011; Doney, 2013; Day & Hong, 2016; Newberry & Allsop, 2017; Wilcox & Lawson, 2018; Whitfield, 2019; Sossick et al., 2019). Huge class sizes and too many assigned classes were also mentioned as causing stressful amounts of workload (Newberry & Allsop, 2017; Ellison & Mays-Woods, 2019b).

The influence of heavy workload on teacher resilience was quantified by Richards et al. (2019), who reported that role overload was the strongest determinant of emotional exhaustion in teachers. Ainsworth and Oldfield (2019) concurred, finding that workload was an important contextual predictor of teacher resilience.

Indeed, extant literature regarding the Philippines, UK, and US recognise the importance of organisational-institutional factors in the development of teacher resilience. However, enquiry into the influence of broader cultural and structural factors on these organisational and institutional elements, as well as on personal and social aspects of teacher resilience, remains sparse. I discuss the cultural-structural dimension in the next sub-section.

3.1.2 Cultural-structural dimension

The cultural and structural dimension of teacher resilience is overwhelmingly under-examined in the teacher resilience literature included in this systematic review. In discussing culture, I refer not to school culture, as Mansfield et al. (2014) did, but to how societal norms, values, and behavioural patterns influence how resilience develops and manifests, as observed by Ungar (2008). Cultural-structural factors coded in only 22 articles, compared with 93 for personal factors, 87 for social factors, and 92 for organisational-institutional factors. This finding aligns with B. Johnson and Down's (2013) observation that teacher resilience literature has tended to disregard the cultural, historical, and politico-economic contexts surrounding teachers' work. Inattention to culture is also evident in the broader resilience literature, as reported by Raghavan and Sandanapitchai (2021).

In my thematic synthesis, I could extract only two sub-themes within the cultural-structural dimension: cultural differences (6 articles) and minority identities (18 articles).

3.1.2.1 Cultural differences

Only six of the studies included in this systematic review enquired into the cultural dimension of teacher resilience. In addition, the few that did provide little meaningful exploration of cultural factors. Moreover, each instance coded as cultural difference was also coded as a risk factor.

Four of the six studies discussed cultural differences perceived by teachers from ethnic minority backgrounds – that is, cultural tensions they experienced as ethnic minority teachers in predominantly white institutions (Polidore et al., 2010; Martinez et al., 2017; Dvorakova, 2018; Dollarhide et al., 2018). Two studies (Doney, 2013; Kelly et al., 2015) contained a reference to a white teacher who reported

teaching difficulties arising from their inadequate understanding of the cultures of their students, who came predominantly from ethnic minority backgrounds. However, the nature of these cultural differences is not discussed.

Risk arising from cultural differences included linguistic challenges (Polidore et al., 2010; Martinez et al., 2017), stereotype threat (Dvorakova, 2018), and delegitimisation of cultural ideals (Martinez et al., 2017; Dollarhide et al., 2018). In all concerned articles, cultural factors were examined through the lens of race or ethnicity.

While it was my intent to more thoroughly explore cultural factors in this systematic review, I could not do so because of the lack of information that would have allowed for such analysis. Even the three articles pertaining to teachers in the Philippines did not delve into cultural determinants of teacher resilience (see Ganotice et al., 2016; C. Santoro, 2017; Del Rosario et al., 2018). Instead, they used existing conceptions and psychometric measures of resilience without exploring potential cultural nuances.

The conception found in the literature included in this systematic review offers a narrow view of culture. While ethnicity indeed predicts cultural values, the extent of this predictive relationship is very small (Desmet et al., 2015). The framing of cultural differences in terms of race is even more problematic. While between-group cultural differences exist across ‘racial groups’, there are far more within-group differences (Betancourt & López, 1993; Nagel, 1994) – for instance, across Asians of different nationalities or Native Americans of different tribal affiliations. Furthermore, that cultural factors are only considered when studying ethnic minority teachers implies the culture of ethnic majorities being taken as the default, and thus not warranting closer enquiry (Betancourt & López, 1993).

3.1.2.2 Minority identities

Minority identities coded in 18 articles included in this review. In this analysis, minority identities refer to social groups occupying disadvantaged positions in society due to structural inequalities, as described by Blau (1977). Race/ethnicity coded the most, appearing in 14 articles, followed by gender (8 articles), and 1 article pertaining to LGBTQ+ teachers.

Articles that reported the experiences of ethnic minority teachers identified several risk factors. Firstly, some studies explained how teachers of colour struggled with perceptions of incompetence by colleagues, administrators, or students' parents (Bryan & Browder, 2013; J. Taylor, 2013; Dollarhide et al., 2018; Dvorakova, 2018; Pizarro & Kohli, 2020). Other studies reported on how teachers of colour felt isolated or othered in their respective school communities (Martinez et al., 2017; Dvorakova, 2018; Pizarro & Kohli, 2020). Higher education professionals reported feeling invisible, their work dismissed by colleagues and the broader scholarly community as being fringe (Dollarhide et al., 2018; Gonzales & Terosky, 2020; Pizarro & Kohli, 2020).

In instances where race/ethnicity was coded as a protective factor, the literature frequently referred to having access to communities of fellow teachers of colour (J. Taylor, 2013; Gonzales & Terosky, 2020; Pizarro & Kohli, 2020). Supportive colleagues and mentors within their respective institutions also buffered against risk (Polidore et al., 2010; J. Taylor, 2013; Martinez et al., 2017; Gonzales & Terosky, 2020). Some studies also reported how teachers of colour were motivated by an aspiration to serve as role models for students of colour (Dollarhide et al., 2018; Dvorakova, 2018).

I also extracted a code for gender minorities. Three of these articles pertained to the experiences of male teachers in fields which were traditionally female-dominated (Werhan, 2010; Bryan & Browder, 2013; Wright, 2018). Two of these three articles pertained to male ECCE teachers (Bryan & Browder, 2013; Wright, 2018), both of which reported risk arising from perceptions of incompetence and negative stereotypes against men in ECCE. Similarly, studies pertaining to female teachers reported how women in traditionally male-dominated fields – such as science, technology, engineering, and mathematics – felt marginalised or like they were not taken seriously by their male contemporaries (Gonzales & Terosky, 2020). In all these instances, studies reported how supportive colleagues and communities helped the said teachers to cope with risk.

One study (Hughes, 2018) pertained to the experiences of LGBTQ+ higher education professionals in a Catholic university. Risks reported in this study included hostile interactions with religious authorities and university administrators. Similar to the findings reported for gender and ethnic minorities, the presence of social support networks also appeared as a protective factor. In addition, positive changes in school climate – that is, how it has become more accepting of LGBTQ+ academics – were also cited as a protective factor.

Indeed, the literature included in this systematic review has allowed me to use an ecological framework to conceptualise teacher resilience, describing it as an interaction of factors across personal, social, organisational-institutional, and cultural-structural dimensions. These interactions can result in increased vulnerability or resilience, which can, in turn, yield various consequences.

In the literature surveyed for this systematic review, teacher resilience (or vulnerability) was most associated with attrition or retention (41 articles) and burnout (38 articles). Other consequences linked to teacher resilience included teacher effectiveness (19 articles), job satisfaction (12 articles), and physical illness (11 articles). However, the consequences associated with teacher resilience are outside the scope of this systematic review, and thus, I will not expound on them; these could instead be the subject of succeeding systematic reviews.

I must also accompany the findings of my thematic synthesis with certain limitations. These limitations are discussed in the next section, which pertains to the breadth and quality of the literature examined in this review.

3.2 Research question 2: Breadth and quality of the evidence base

The findings I have presented above need to be understood in view of their contextual limitations. These limitations include: (a) the over-representation of certain geographies; (b) the under-examination of certain vulnerable populations; and (c) the limited sub-sectoral coverage of the teacher resilience literature. To give a more detailed view, I have also included pertinent characteristics of included studies in Appendix C.

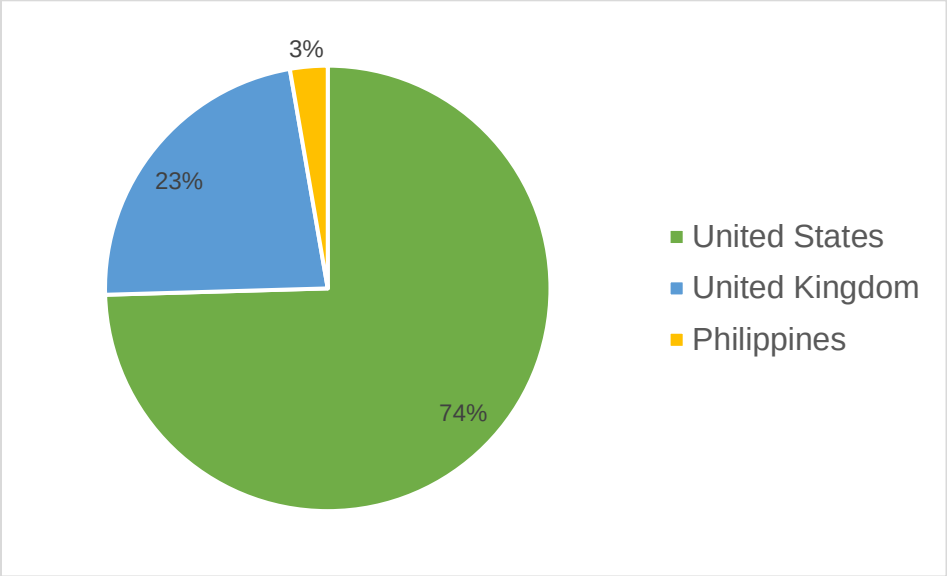
In addition, I appraised the methodological quality of the teacher resilience literature surveyed in this review. It is important to consider methodological adequacy and freedom from bias of surveyed literature since they influence the validity and trustworthiness of insights drawn from the systematic review (Petticrew & Roberts, 2006).

3.2.1 Uneven geographical representation

While this systematic review sought to examine teacher resilience as conceptualised in literature regarding the Philippines, UK, and US, I found that the

US was largely over-represented in the included literature. The US was the country of interest in 82 articles, the UK in 25 articles, and the Philippines in only 3 articles, as illustrated in Figure 3.

Figure 3. US-dominated conceptualisation of teacher resilience

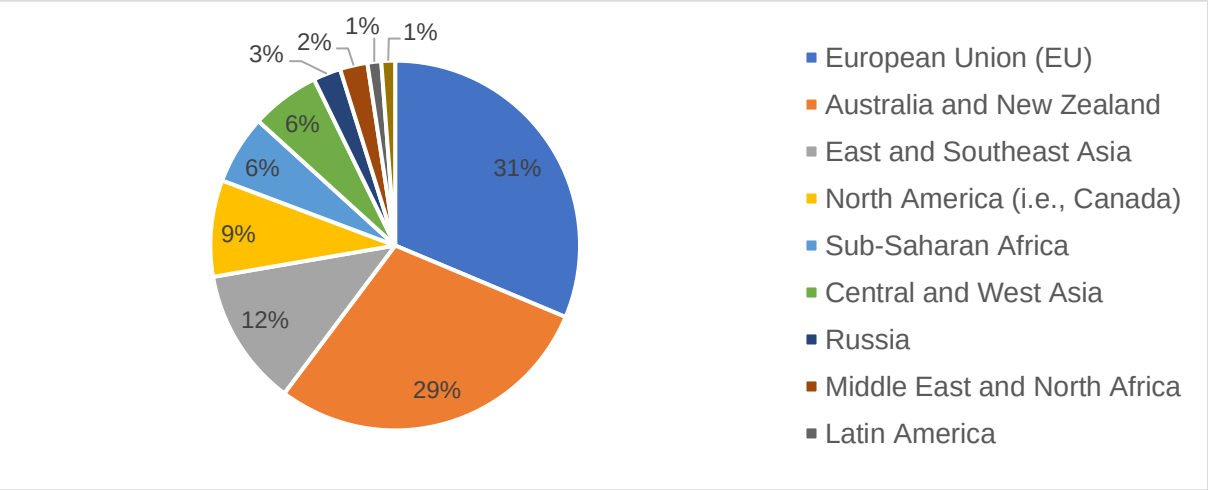


While I expected that articles regarding the US would comprise the largest fraction of the included articles, I did not anticipate the extent to which it would be over-represented. The inclusion of only three articles about the Philippines – coupled with the under-examination of cultural factors, which I discussed earlier in this chapter – limited my ability to undertake a comparative analysis that incorporates cultural understandings of teacher resilience. The under-representation of the Philippines in the teacher resilience literature included in this review could be attributed to an epistemological difference: resilience scholarship in and about the Philippines is still primarily in the context of natural disasters. However, this does not capture the whole picture.

The predominance of certain geographical regions over others in the teacher resilience literature was also true of the articles **excluded** based on their countries of interest. As shown in Figure 4, literature regarding European countries, Australia, and

New Zealand constituted over half of the articles excluded because of country of interest. An additional 9% concerned teachers in Canada.

Figure 4. Uneven geographical distribution in articles excluded based on country



This uneven geographical distribution might, in part, account for the monolithic, Euro-American notion of teacher resilience observed by B. Johnson and Down (2013). The predominance of certain geographies – especially those with more individualist cultural sensibilities – observed in this review also suggests that scholarly understandings of teacher resilience favour notions that endorse personal responsibility (B. Johnson & Down, 2013). While the literature surveyed in this review portrayed an ecological view of teacher resilience, it nonetheless stopped short of closely examining how broader structural factors affected teachers' lives.

This uneven distribution could also signal the presence of broader structural barriers to knowledge production. As observed by Narvaez-Berthelemot and Russell (2001), 97% of journals from high-income countries listed in UNESCO's list of social science periodicals are indexed in the SSCI, compared to only 2.3% and 0.7% from middle- and low-income countries, respectively. This imbalance in knowledge production still holds true today, with social research in low- and middle-income

countries remaining peripheral to that generated in high-income countries (Demeter, 2019).

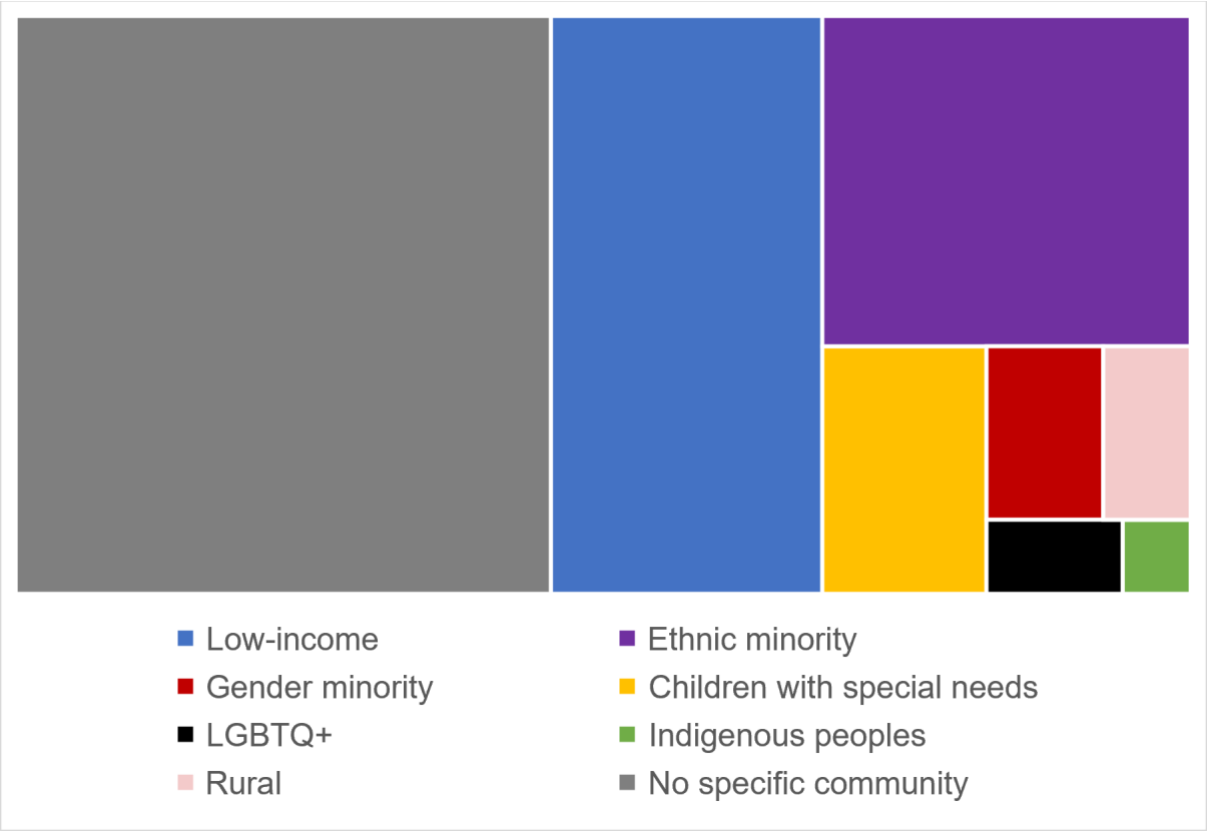
In any case, this finding reveals a need for emic studies on teacher resilience – that is, exploratory studies that surface cultural specificities (Church & Katigbak, 1988). After all, culture shapes how individuals and societies understand and manifest resilience (Ungar, 2008; Buse et al., 2013; Motti-Stefanidi, 2018).

The under-representation of certain geographies in the teacher resilience literature might also mean that some populations remain under-studied. This is evident in the populations of interest in the literature included in this review.

3.2.2 Under-examined populations

Over half of the included articles do not focus on a specific population. In most instances, this is due to an attempt to have a representative sample that accounts for the experiences of teachers across different types of school environments, especially in the case of quantitative studies – a reasonable and valuable research objective. However, where studies chose to focus on a specific population, a large majority focused on issues of poverty and ethnicity (or race). This is illustrated in Figure 5.

Figure 5. Disproportionate interest in low-income and ethnic minority populations



The focus on low-income populations is unsurprising, given how broader research commonly theorises resilience in the context of poverty (Béné et al., 2015). Articles that enquired into ethnic minorities either explored the experiences of ethnic minority teachers in their respective institutions (e.g., Bryan & Browder, 2013; Martinez et al., 2017; Damico et al., 2018; Dvorakova, 2018; Pizarro & Kohli, 2020) or teachers working in schools with predominantly ethnic minority student populations (e.g., Gu & Day, 2013; Kelly et al., 2015; Dollarhide et al., 2018; Hirsch, 2018; Beck et al., 2020). That a sizeable portion of the literature included in this study focused on ethnic minorities is also unsurprising, given the embeddedness of ethnic diversity in the political systems of the UK and US (Aspinall, 2020; Herman, 2020).

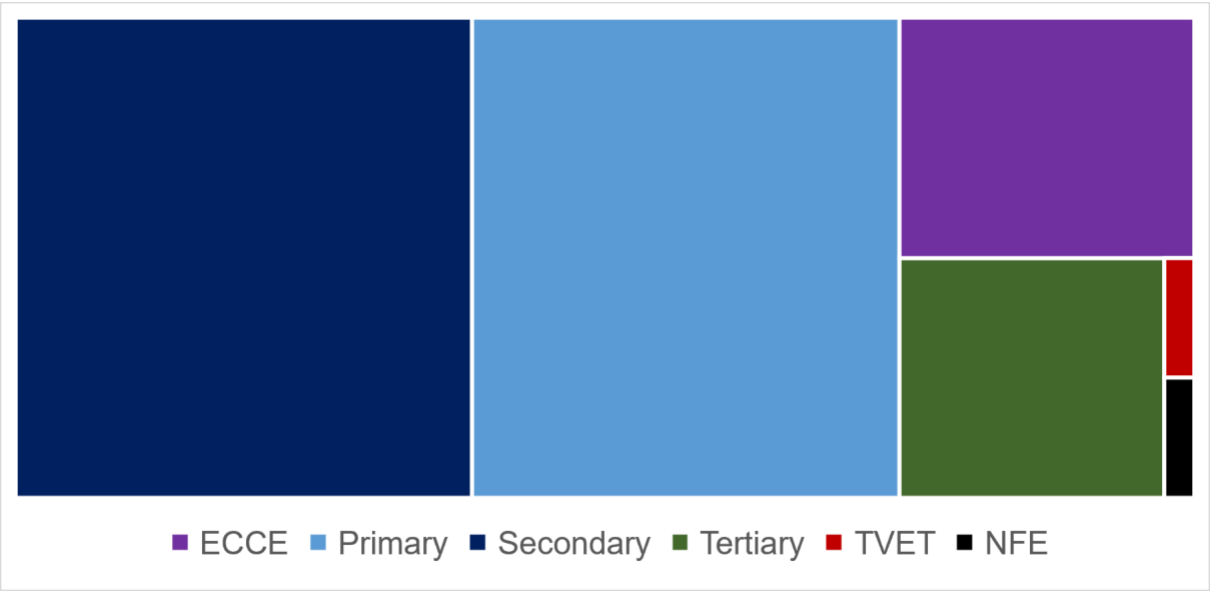
The same is not true of the Philippines, which has accorded little attention to its ethnic and cultural diversity (Hara & Celero, 2020). Nonetheless, the Philippines is home to certain vulnerable populations – including but not limited to ethnic minority

groups – which, given the country's under-representation in the extant literature, remain invisible in teacher resilience scholarship. For instance, only one article in this review pertained to the experience of a teacher serving indigenous Filipino peoples (C. Santoro, 2017). Filipino teachers serving vulnerable populations, including but not limited to remote island-dwellers or children in conflict-torn Mindanao, face unique challenges that teachers in the UK or US do not experience. This underscores the spatial and temporal specificity of resilience evoked by Ungar (2008). Therefore, the resilience of teachers across the Philippines is fertile ground for empirical enquiry.

3.2.3 Heavy focus on formal education

Another unique contribution of this review is its mapping out of research gaps in teacher resilience scholarship, in terms of sub-sectoral coverage. As illustrated in Figure 6, the literature included in this review overwhelmingly focused on teachers in formal educational settings, especially at the primary and secondary level. Note, however, that three articles did not specify a sub-sector.

Figure 6. Disproportionate interest in formal educational settings



Even within the formal educational sector, there is stark disparity. For instance, teachers in ECCE (20 articles) and the tertiary sub-sector (18 articles)

received much less research attention than those in the primary and secondary sub-sectors, who are studied in 60 and 62 articles, respectively.

Far less researched is the TVET sub-sector; only one article concerned teacher resilience in the TVET context (Kadi-Hanifi & Keenan, 2016). Teacher resilience in NFE settings was similarly under-researched, also with only one article pertaining to it (Henderson et al., 2018). While the ecological framework developed through this review would also apply to TVET and NFE teachers, it is nonetheless important to note that teaching in TVET and NFE settings poses challenges that might not be experienced by teachers in formal education.

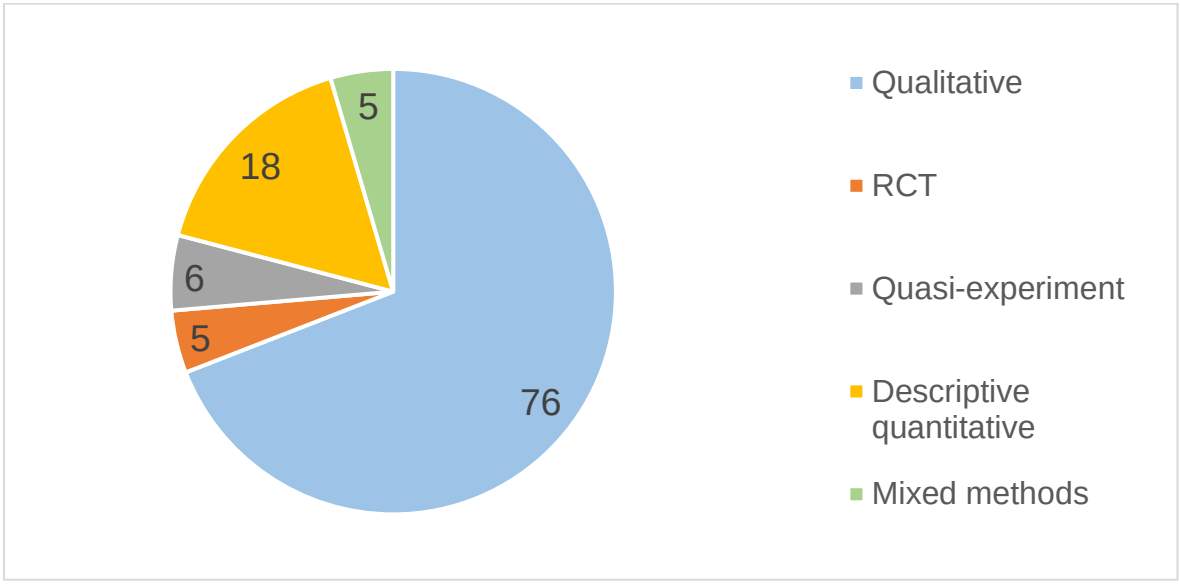
For instance, TVET teachers interface with industry partners, who are often reluctant to support TVET programmes (UNESCO-UNEVOC, 2012). Some TVET teachers also have to manage school-based enterprises, which are often underfinanced, forcing teachers to implement cost-efficiency measures that might curtail the mission of such initiatives (UNESCO-UNEVOC, 2005). NFE teachers face unique challenges as well, such as the multi-provider model for NFE programmes and the absence of a standardised curriculum (Carron & Carr-Hill, 1991). Therefore, a fuller understanding of teacher resilience mechanisms necessitates enquiry into the experiences of TVET and NFE teachers.

Having established the conceptual limitations of teacher resilience literature included in this review, I will now appraise the methodological quality of included studies. This will equip the reader with the information needed to evaluate the credibility of the knowledge generated by this review.

3.2.4 Critical appraisal of included studies

The articles included in this review employed a wide range of methodological approaches, namely: qualitative methods, RCTs, quasi-experiments, descriptive quantitative methods, and mixed methods. The number of articles using each method enumerated above is shown in Figure 7.

Figure 7. Different methods used across 110 articles included in the review



The frequency of methodological approaches observed in this study is consistent with that reported by Beltman et al. (2011) in their systematic review conducted a decade earlier, except for one crucial difference: while Beltman and colleagues reported a complete absence of intervention studies in 2011, my review included 18, of which 5 RCTs, 6 quasi-experimental studies, and 3 mixed-methods studies. This might signal growing interest in evaluating teacher resilience development programmes – perhaps the beginning of a third wave of teacher resilience research.

It must be noted, however, that four of these eighteen studies examined the same programme (Cultivating Awareness and Resilience in Education), from pilot to rollout in different school districts; two evaluated the ACHIEVER programme.

Furthermore, all except one study assessed the effectiveness of psychological interventions. The prevalence of psychotherapeutic approaches in teacher resilience interventions mirrors trends observed by wider systematic reviews regarding resilience interventions (Joyce et al., 2018; Liu et al., 2020).

I begin this appraisal by assessing the methodological quality of these randomised and quasi-experimental intervention studies, followed by mixed-methods studies, then descriptive quantitative studies, and lastly, qualitative studies. Appraisals were conducted against criteria laid out by the MMAT (Q. N. Hong et al., 2018), as described in Chapter 2.

3.2.4.1 Appraisal: RCTs

My appraisal of the five RCTs included in this study is summarised in Table 4; detailed appraisal of each RCT can be found in Appendix D.

Table 4. Appraisal summary for RCTs

CRITERIA	Yes	Somewhat	No	Can't tell	Not assessed
Clear research question(s)	5	0	0	0	0
Data collected answers research question(s)	5	0	0	0	0
Randomisation appropriately performed	1	5	0	0	0
Groups comparable at baseline	5	0	0	0	0
Complete outcome data	5	0	0	0	0
Outcome assessors blinded	5	0	0	0	0
Adherence to intervention	5	0	0	0	0

Two of the RCTs employed a randomised controlled block design while three opted for a multi-site cluster randomised design. However, only one RCT fully satisfied the randomisation criteria. While all five RCTs thoroughly explained their randomisation procedure, some designs risked introducing bias. Two studies (Cook

et al., 2017; Jennings et al., 2017) had participants volunteer their involvement in the intervention, risking self-selection bias. Stoiber and Gettinger (2011) attempted to randomise classrooms into the treatment or control group, but district leaders insisted on randomising at the district level, thus preventing the researchers from achieving true randomisation.

All RCTs reported high intervention fidelity. However, it must be noted that two studies did not include an active control group (i.e., Jennings et al., 2013, 2017). As such, I cannot rule out the possibility that the changes observed are not a treatment effect, but merely a result of extraneous variables, such as increased attention received throughout the intervention.

Overall, the RCTs included in this review demonstrated appropriate controls against potential sources of bias. As such, their findings can be considered valid.

3.2.4.2 Appraisal: quasi-experimental studies

Table 5 summarises my appraisal of the six quasi-experimental studies included in this review. Detailed appraisals are found in Appendix E.

Table 5. Appraisal summary for quasi-experimental studies

CRITERIA	Yes	Somewhat	No	Can't tell	Not assessed
Clear research question(s)	6	0	0	0	0
Data collected answers research question(s)	6	0	0	0	0
Representative sample	2	0	4	0	0
Appropriate measurements	4	2	0	0	0
Complete outcome data	2	3	1	0	0
Confounders accounted for	1	0	5	0	0
Adherence to intervention	3	3	0	0	0

Only two of the quasi-experimental studies included in this review used samples that were representative of the population. Four of the studies reported

small sample sizes that either under-represented or completely excluded certain demographics (i.e., Jennings et al., 2011; Larson et al., 2018; Chesak et al., 2019; Lang et al., 2020). That said, all four articles concerned pilot studies; as such, small sample sizes are expectable.

Two studies relied exclusively on self-reported data to measure behaviours that could have been more reliably monitored through direct observation – that is, participation in online courses (Lang et al., 2020) and intervention fidelity (Larson et al., 2018). The four other studies also used self-reported data as outcome measures, but this is acceptable since the outcome measures pertained to subjective psychological states, such as stress and self-efficacy. Furthermore, only one study (Lang et al., 2020) identified and attempted to statistically control against potential confounding variables. This inattention to confounding variables was a serious weakness identified across the quasi-experimental studies in this review.

Participant attrition and non-response were also a serious concern. One study reported a moderate attrition rate at 27% (Oakes et al., 2013). Another indicated relatively high attrition across three time points, with only 54.5% of the sample remaining at the final follow-up (Chesak et al., 2019). Two studies (Frank et al., 2015; Lang et al., 2020) did not declare missing data diagnostics, but used statistical procedures to replace or eliminate missing values.

In summary, the quasi-experimental studies included in this review, which were mostly pilot studies, demonstrated a modest level of freedom from bias.

3.2.4.3 Appraisal: mixed-methods studies

My appraisal of the five mixed-methods studies included in this review is summarised in Table 6. The detailed appraisal can be found in Appendix F. Three of these articles were intervention studies (Reiser & McCarthy, 2018; Maratos et al.,

2019; Soulen, 2020) while two were descriptive studies that used qualitative data to supplement quantitative results (Grenville-Cleave & Boniwell, 2012; Chiong et al., 2017).

Table 6. Appraisal summary: mixed-methods studies

CRITERIA	Yes	Somewhat	No	Can't tell	Not assessed
Clear research question(s)	4	0	1	0	0
Data collected answers research question(s)	4	0	0	0	1
Adequate rationale for mixed methods	4	0	0	0	1
Integrated quantitative and qualitative results	4	0	0	0	1
Quantitative and qualitative outputs adequately interpreted	4	0	0	0	1
Divergences in quantitative and qualitative results addressed	4	0	0	0	1
Adherence to standards of both traditions	0	3	1	0	1

One mixed-methods study included in this review did not have a clearly stated research question (Grenville-Cleave & Boniwell, 2012), and thus, was not assessed against the remaining criteria, in keeping with MMAT guidelines (Q. N. Hong et al., 2018).

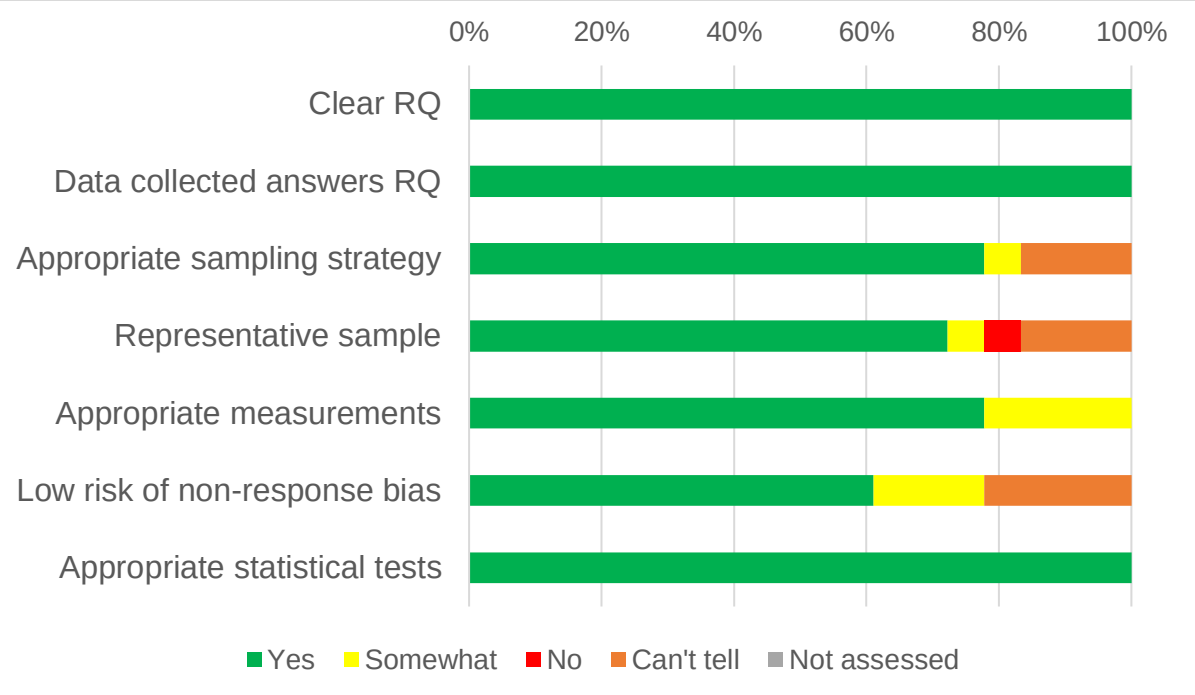
Overall, three of the remaining mixed-methods studies demonstrated appropriate controls against potential sources of bias, except for methodological shortcomings, such as lack of instrument testing for reliability and construct validity (Chiong et al., 2017), lack of an active control group (Maratos et al., 2019), or potential self-selection bias from sampling based on voluntary participation (Reiser & McCarthy, 2018). Moreover, one intervention study (Soulen, 2020) did not discuss how it controlled against the potential impact of individual differences across intervention implementers on fidelity.

Despite these methodological reservations, four of the five mixed-methods studies included in this review showed good integration of quantitative and qualitative findings. Therefore, their reported results can be considered valid.

3.2.4.4 Appraisal: descriptive quantitative studies

Eighteen descriptive quantitative studies were included in this review. Seventeen studies used surveys for data collection, one of which (Doyle et al., 2019) also implemented an observation instrument as an additional measure. Robertson-Kraft & Duckworth (2014) opted to use a rating instrument scored by independent assessors to measure grit. My appraisal of these eighteen studies is summarised in Figure 8; detailed appraisals are found in Appendix G.

Figure 8. Appraisal summary: Descriptive quantitative studies



The main issues concerned sampling and instrumentation. For instance, three studies (Ganotice et al., 2016; Carson et al., 2017; S. J. Johnson et al., 2019) did not describe their sampling procedure. Three failed to adequately describe their sample characteristics, which made it impossible to determine if the sample was

representative of the broader population (Allen et al., 2017; Del Rosario et al., 2018; S. J. Johnson et al., 2019). Robertson-Kraft and Duckworth (2014) used a stratified random sampling strategy to ensure representativeness; however, their sample consisted solely of alternatively certified teachers, which prompts a necessary caveat about whether their conclusions can be extended to the broader teacher population.

Issues regarding instrumentation primarily concerned failure to test or report reliability and validity of all surveys used (Allen et al., 2017; Carson et al., 2017; Reeder, 2020). Reliance on self-reports to measure behaviours that could have otherwise been directly observed was also a concern (Khan et al., 2020; Reeder, 2020). I also noted four studies that did not report non-response rates (Ganotice et al., 2016; Carson et al., 2017; Richards et al., 2019; Ainsworth & Oldfield, 2019), which prevented me from ruling out the possibility of non-response bias.

Despite these issues, the appraisal nonetheless showed that the descriptive quantitative studies included in this review enforced strong controls against potential sources of bias.

3.2.4.5 Appraisal: qualitative studies

Seventy-six qualitative studies were included in this review, constituting the majority of the literature examined. Semi-structured interviews were the most frequently used data collection method. Only one article did not clearly articulate its data collection method (C. Santoro, 2017). Table 7 below lists the various methods used by the qualitative studies in this review.

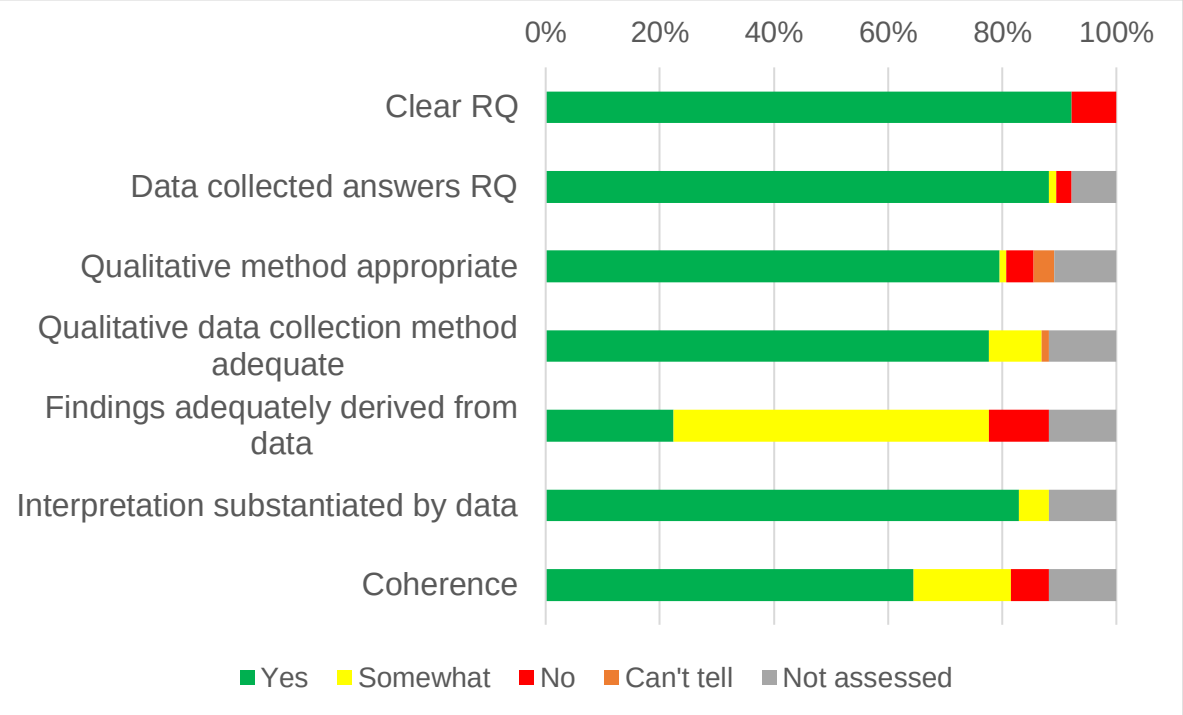
Table 7. Methods used by qualitative studies in this review

Semi-structured interview	41
Unstructured interview	2
Survey	4
Focus group discussion	6
Ethnography	1

Oral life history	1
Autoethnography	2
Counterstorytelling	1
Visual method	1
Multi-method	16
Unclear	1

Figure 9 summarises my appraisal of these qualitative studies. The detailed appraisal is found in Appendix H.

Figure 9. Appraisal summary: qualitative studies



Six studies did not state a clear research question and were thus excluded from further appraisal (D. A. Santoro, 2011; Rabin & Smith, 2012; A. Griffiths, 2014; O'Keeffe, 2015; C. Santoro, 2017; Carlson, 2019). Three studies reported findings that did not adequately respond to their declared research questions, and hence were also excluded from further appraisal (Douglass, 2016; L. P. Taylor & Newberry, 2018; Wright, 2018).

In the remaining studies appraised against the succeeding MMAT criteria, I identified the non-discussion of researcher positionality as the foremost issue; this was an omission I observed in 46 articles. In addition, 15 studies did not clearly explain their analytical approach, which weakened the confirmability of their findings. Fourteen articles did not discuss validation procedures, which reduced their credibility.

However, despite these omissions, the appraisal showed a qualitative evidence base that provided thick descriptions of teachers' experiences of resilience and vulnerability. These thick descriptions were a rich source of data for the thematic synthesis.

3.3 Summary

The findings of this systematic review align with the widely accepted ecological view of teacher resilience. The framework resulting from the thematic synthesis resembles the multi-dimensional frameworks forwarded by other teacher resilience researchers (Théorêt et al., 2006; Mansfield et al., 2012; B. Johnson et al., 2014). The thematic synthesis highlights how the interplay of individual and contextual factors influences teacher resilience, indicating its malleability. This understanding of teacher resilience as a malleable phenomenon is consistent with the dynamic conception of resilience advanced by second-wave resilience researchers (Kumpfer, 1999; Luthar et al., 2000; Masten, 2001; Rutter, 2006, 2012) – the conception that has become the most widely accepted in resilience scholarship. It is possible that widespread recognition of the malleability of teacher resilience has generated increasing interest in intervention studies, as observed in this review. This contrasts with Beltman et al.'s (2011) findings in their systematic review a decade ago, which included no intervention studies.

Through the thematic synthesis, I extracted four dimensions: personal, social, organisational-institutional, and cultural-structural. While the first three find some equivalence with the dimensions identified by Mansfield et al. (2016) in a previous systematic review, the cultural-structural dimension is a novel expansion. However, this dimension was largely under-represented in the literature included in this review, compared to the personal, social, and organisational-institutional dimensions. This does not discredit its existence, however.

The role of culture in resilience mechanisms is well-documented (Ungar et al., 2007; Ungar, 2008; Buse et al., 2013; Southwick et al., 2014; Motti-Stefanidi, 2018), but empirical resilience literature rarely provides a meaningful discussion (Raghavan & Sandanapitchai, 2021). Similarly, structural inequities influence risk and resilience (Olsson et al., 2015; Park et al., 2020) yet remain largely ignored by extant teacher resilience scholarship (B. Johnson & Down, 2013). Therefore, the inattention to cultural and structural factors is not due to their non-existence; it only signifies a gap in the teacher resilience literature.

I found various risk and protective factors across the four dimensions. As such, different configurations of various factors within each dimension influence whether a teacher is more vulnerable or resilient. This is not unlike Leroux and Théorêt's (2014a, 2014b) conception of teacher resilience as homeostasis between risk and protective factors, but instead of a balancing scale, resilience can be imagined as being on one end of a spectrum, with vulnerability on the opposite end. Different configurations within each of the four dimensions identified determine a teacher's position along the vulnerability-resilience spectrum.

It must be noted, however, that the conceptual limitations of the included literature imply the same conceptual limitations in my systematic review. Given the

context-dependent nature of teacher resilience (Mansfield et al., 2012), the framework I developed can only account for the contexts represented in the literature included in the review.

For instance, while I intended to develop a more culturally nuanced conceptualisation of teacher resilience, insufficient data pertaining to cultural factors across all three countries of interest prevented me from doing so. Furthermore, given the meagre representation of scholarship regarding the Philippines, and the vast over-representation of research about the US, I cannot ascertain the extent to which the framework developed in this study is transferable to the Philippines, let alone to other educational systems. Similarly, the relative absence of resilience literature on TVET and NFE teachers prevents me from postulating the extent to which this framework applies to the said sub-sectors.

That said, the conceptual limitations of this systematic review do not diminish its intellectual contribution. In conducting this review, I have surfaced an additional layer of the ecosystem – cultural and structural factors – that exerts an influence on teacher resilience. Furthermore, the conceptual limitations identified point towards areas that warrant further research.

Chapter 4: Conclusions and Recommendations

Through a thematic synthesis of teacher resilience literature regarding three countries, published over the past decade, I have developed a multi-dimensional ecological framework for understanding teacher resilience. This framework understands teacher resilience as a product of the interactions between individual and contextual risk and protective factors.

Aligned with broader resilience literature, this systematic review recognised how individual differences in teachers' values, knowledge, and skills contributed to their resilience. However, these individual differences only partly account for teacher resilience. Malleable and thus subject to the influence of contextual factors, teacher resilience is also largely influenced by teachers' social support structures both within and outside the school. Organisational and institutional factors are also critical to teacher resilience. For instance, school climate, which is itself influenced by school leadership, can determine the presence or absence of organisational structures and practices that may support or hinder the development of teacher resilience. Institutional regimes, such as the prevalence of accountability mechanisms in education, also exert an influence on school climate, and in consequence, on teacher resilience.

These individual, social, and organisational-institutional factors can function as risk or protective factors, depending on their configuration. For instance, school climates that incorporate communities of practice could provide opportunities not only to enhance teachers' skills but also to develop relationships with their colleagues. Conversely, schools that lack avenues for professional collaboration could leave teachers feeling isolated, and thus, more vulnerable. Therefore, teacher resilience can be imagined as a spectrum, with vulnerability and resilience on opposite ends. A

teacher's location on that vulnerability-resilience spectrum is determined by the configuration of individual, social, and organisational-institutional factors.

However, it is important to note that there are factors beyond the walls of schools and other educational institutions that also exert an influence on teacher resilience. While previous reviews have also identified contextual factors that influence teacher resilience, their analyses were limited to teachers' immediate environment. Indeed, determining antecedents of resilience within teachers' immediate environments is a valuable contribution, but it does not capture the full picture. A principal difference of the framework developed through this review, compared to those articulated in previous reviews, is its attention to broader cultural and structural factors.

Resilience is culturally and temporally situated; as such, it may manifest differently across various societies. However, the teacher resilience literature surveyed in this review has remained relatively mute about the influence of culture. Moreover, the literature demonstrated a narrow conception of culture, examining it only as it pertains to the resilience of ethnic minority teachers or teachers serving ethnic minorities. In addition, the uneven geographical distribution of teacher resilience literature endorses a limited understanding – one that privileges resilience as it is understood in wealthier, Western, more individualist societies. Therefore, teacher resilience in under-represented geographies is ripe for enquiry.

Education exists within a broader ecosystem. It is socially determined and can hence reproduce socio-cultural structures. Structural inequities reflected in educational institutions create risk for teachers as well. However, the impact of broader structural factors on teacher resilience remains under-examined. Moreover, investigation of teacher resilience in the context of vulnerable groups has also largely

focused on low-income and ethnic minority communities. This is another area that warrants further research. For instance, teachers serving geographically isolated or internally displaced learners might face different risks than those serving children from low-income, urban households.

The sparseness of teacher resilience research examining vulnerable populations besides poor and ethnic minority populations also reveals a limited epistemology of vulnerability. As such, enquiry into the meanings of vulnerability in an educational context would also be worth pursuing. Research into vulnerability would inevitably contribute to knowledge about resilience, especially if one sees both phenomena as existing on the same spectrum.

Moreover, in studying teacher resilience, this review located resilience at the level of the individual. While the classical psychological conception of resilience – which heavily influenced educational conceptions – takes the individual as the unit of analysis, this should not preclude an investigation of resilience at a collective level. Other fields of social science, such as geography and sociology, as well as cross-cultural psychology, have already begun enquiring into community resilience – that is, how organised social units overcome risk. Through this same lens, It is not difficult to imagine enquiry into school resilience. It would be interesting to explore how schools as organisations survive external shocks, like the coronavirus pandemic, for instance. Given such a recent external shock that has shaken educational institutions globally, there is much room for enquiry into factors that have enabled schools to persist in the face of unprecedented circumstances.

That said, research into teacher resilience, and resilience in education in general, should not be limited to formal educational institutions. As this review has highlighted, teacher resilience literature has largely focused on formal education,

especially primary and secondary education. Research into the resilience of TVET and NFE teachers is virtually absent, despite the unique challenges they face. Further enquiry into these areas would be timely, given the shift in the policy agenda from schooling to lifelong learning. Therefore, it is important to understand the needs of teachers serving adult populations or working in non-traditional educational settings.

Despite these conceptual limitations, the teacher resilience literature surveyed in this review shows methodological diversity, albeit heavily skewed in favour of qualitative studies. That said, this review observed an increased interest in evaluating teacher resilience interventions – research that was completely absent in previous systematic reviews. Widespread acceptance of teacher resilience as a malleable phenomenon could explain the growing interest in intervention studies that was observed in this study.

It must be noted that the intervention studies included in this review pertained almost exclusively to psychological interventions, and thus focused on changing teachers' individual behaviours and dispositions. This is an important aspect of teacher resilience, but future interventions might consider implementing changes at the level of schools, local authorities, or educational ministries, given the sizeable influence of organisational and institutional factors on teacher resilience. Cultural and structural factors are more difficult to change, however, and would require concerted effort at national and international level.

This study, despite its theoretical and methodological limitations, has nonetheless offered an expanded conceptualisation of teacher resilience and its

enabling mechanisms. That said, I harbour the same ambivalence about resilience discourses in education that I had before embarking on this study.

While I believe it important to understand how teachers and learners can succeed despite difficult circumstances, I remain frustrated that certain learning environments become so difficult, that teachers and learners need to be resilient. In articulating an ecological framework of teacher resilience that takes stock of broader cultural and structural factors, it is my hope that future research will begin to pay closer attention as well.

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Appendices

Appendix A: Review protocol

Title

Conceptualising teacher resilience: A comparative systematic multi-disciplinary review of teacher resilience literature

Registration

This protocol has not been registered in any existing systematic review databases.

Author

Miguel Subosa
Postgraduate student in Master of Science in Education (Research Design and Methodology) at the University of Oxford
Address: 1 Crick Road, Oxford, United Kingdom OX2 6QJ
Mobile: +44 7708 171858
Email: mrt.subosa@gmail.com

Contributions

Miguel Subosa developed this protocol, conducted the literature search, and performed subsequent analyses.

Dr. Ashmita Randhawa, as dissertation supervisor, provided technical and methodological guidance throughout the implementation of this systematic review.

Amendments

The quality assessment section of this protocol was amended. Critical Appraisal Skills Programme (CASP) tools were originally proposed as the appraisal framework; the Mixed Methods Appraisal Tool (MMAT) was used instead. The latest version of NVivo, called NVivo (without a version number), was also used instead of the originally proposed NVivo 12.

Support

No other sources of funding or support were provided for the conduct of this review.

INTRODUCTION

Rationale

Enquiry into teacher resilience is an important area of educational research since it can influence policies and practices that affect the well-being, professional development, and retention of teachers. Rooted in broader psychological resilience theories, which remain conceptually ambiguous (Liu et al., 2020), teacher resilience warrants conceptual clarification.

An ecological view of teacher resilience, which considers the interactions of both individual and contextual factors, has become the most widely accepted lens to understanding teacher resilience (e.g., Théorêt, 2006; Mansfield et al., 2012; B. Johnson et al., 2014). As such, teacher resilience is imagined as malleable, and thus subject to an interplay of personal dispositions and contextual elements (Dworkin, 2009; Mansfield et al., 2012).

However, despite this ecological orientation, cultural and structural factors remain largely under-examined within the teacher resilience literature (A. Price et al., 2012; B. Johnson & Down, 2013). Furthermore, scholarly conceptions of teacher resilience lean heavily towards Euro-American notions of resilience (B. Johnson & Down, 2013).

The lack of studies on teacher resilience in the Philippines represents a geographical gap. While resilience is well-studied in the Philippines, it has almost exclusively been investigated in the context of natural hazards (e.g., Uy et al., 2011; Hechanova et al., 2015; Walch, 2018; Baybay & Hindmarsh, 2019). Given this disproportionate interest in disaster resilience, teacher resilience remains under-theorised in the Philippines.

It must also be noted that there is little examination of the scope of teacher resilience literature. Previous systematic reviews have been implemented (i.e., Beltman et al., 2011; Mansfield et al., 2016), but none pay attention to the sub-sectoral coverage of teacher resilience literature. This is an important consideration, given the different challenges faced by teachers across various levels of education. There has also been no examination of the types of vulnerable communities studied in the teacher resilience literature. Since vulnerability is a concept inseparable from resilience (Luthar et al., 2000), this is an important question.

In addition, there has been no investigation of the methodological approaches currently being used by teacher resilience researchers since Beltman et al.'s (2011) systematic review a decade ago. Moreover, none of these systematic reviews account for potentially redundant constructs. Given the proliferation of redundant constructs in the social sciences (Le et al., 2010), this is a critical methodological gap.

Objectives

Given the previously identified gaps in the literature, this systematic review seeks to clarify conceptions of teacher resilience across three countries: the Philippines, United Kingdom, and United States. It aims to answer the following research questions:

- How is teacher resilience conceptualised in educational literature regarding the Philippines, United Kingdom, and United States between the years 2010 and 2020?
    - Which individual and contextual factors are associated with teacher resilience?
- What is the breadth and quality of the evidence base on teacher resilience in the Philippines, United Kingdom, and United States between the years 2010 and 2020?
    - In which vulnerable communities do scholars study teacher resilience?
    - At which educational sub-sectors does the literature examine teacher resilience (i.e., pre-primary, primary, secondary, tertiary, non-formal, technical and vocational)?
    - What methodological approaches have been used to investigate teacher resilience?

METHODS

Eligibility criteria

This study uses the following eligibility criteria for inclusion of articles in the systematic review:

- **Type of publication:** The article appears in a peer-reviewed journal or conference proceedings document and reports findings based on an analysis of primary data.
- **Language of publication:** The article is written in English.
- **Year of publication:** The article was published between the years 2010 and 2020.
- **Topic:** The article pertains to teacher resilience and includes teachers as at least one of its units of analysis. For instance, studies examining teacher resilience while also investigating student resilience were included.
- **Country of interest:** The article covers at least one of the following countries: Philippines, United Kingdom, or United States.

Information sources

The literature search will be performed in June 2021 and will use the following databases: Education Resource Information Center (ERIC), British Education Index (BEI), Web of Science, Scopus, PsycINFO.

Search strategy

The study will use the following search string:

> (resilien* OR persever* OR grit OR “psychological capital” OR psycap OR hardiness OR hardy OR katatagan OR “difficult circumstance*” OR “difficult situation*” OR “challenging circumstance*” OR “challenging situation*”) AND (teach* OR instructor* OR professor* OR educator*)

Geographical limiters were purposely excluded from the search string to avoid exclusion of articles that do not mention the country of study in the title or abstract but do so in the main article text.

Data management

Study records will be managed using Zotero, an open-source reference management software.

Selection process

The author will use the previously mentioned eligibility criteria to assess studies for inclusion or exclusion in the systematic review. Studies will be assessed in two phases: (1) title and abstract screening; and (2) full-text screening. Studies that do not mention their country or countries of study in the title or abstract will not be excluded in the first phase; this information will instead be verified in the second phase (full-text screening).

Data collection process

Data will be collected through a data extraction table, in Microsoft Excel format, designed for this systematic review.

Data items

The author will extract the following data items from each article:

- Title
- Author
- Year of publication
- Journal
- Research questions
- Research design
- Sample description
- Contextual information
    - Country of interest
    - Education sub-sector
    - Community studied
- Method of data collection
- Method of data analysis
- Results
- Conclusions

Quality assessment

The author will evaluate the quality of each study using the Mixed Methods Appraisal Tool (Q. N. Hong et al., 2018), which provides a unified framework for appraising research using different quantitative and qualitative research methods.

Data

The author will copy and paste the results and discussion section of each eligible study into NVivo and will code the pasted text using a codebook. This codebook will include both deductive and inductive codes. These codes will then be used to perform a thematic synthesis (Thomas & Harden, 2008). Results of both qualitative and quantitative studies will be qualitatively coded, in accordance with the recommendation of Pluye and Hong (2014).

Synthesis

The author will report the results of the systematic review through a narrative synthesis. The synthesis will focus on salient similarities and differences across various study characteristics, such as the educational sub-sector and community studied, methodological approach employed, and factors identified as being related to teacher resilience.

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Appendix B: Codebook

Name	Description	Origin	Example quotes	Number of files coded
CONSEQUENCES OF VULNERABILITY OR RESILIENCE	This is an organising theme that was created to group the codes and sub-codes below.	Data-driven (inductive)	(see codes and sub-codes below)	74
Attrition or retention	Instances where teacher resilience was associated with leaving or staying in the teaching profession	Data-driven (inductive)	'These participants highlighted the importance of field experiences and elaborated on what aspects of field experiences could be most valuable to fostering teacher retention.' (Beck et al., 2020) 'We find teacher reports of victimization to be a consistent predictor of teacher turnover, both from the school and from the profession.' (Curran et al., 2019)	41
Physiological symptoms	Instances where exposure to risk resulted in physical illness or where increased resilience was associated with a reduction in physical illness symptoms	Data-driven (inductive)	'The program impact was not statistically significant for any of the three count outcomes… however, there was a tendency for CARE teachers to report fewer symptoms and medication use.' (Jennings et al., 2013) 'A path model was specified with direct effects between resilience and psychological and physical ill-health as well as indirect effects through the eight stressor variables.' (S. J. Johnson et al., 2019)	11

Predictor of job satisfaction	Instances where levels of teacher resilience were associated with changes in levels of job satisfaction (as a whole construct). This does not include teachers qualitatively reporting feeling content with certain aspects of their job.	Data-driven (inductive)	'When examining the adjusted means after controlling for pre-intervention scores, the treatment group was associated with a significantly higher job satisfaction mean than the AC group.' (Cook et al., 2017) 'While not statistically significant, the change in job satisfaction scores from pretest to posttest was greater for group members (M = 71.42 vs. M= 75.08) than for participants in the comparison condition (M= 71.70 vs. 73.37) with a small effect size (g* = .31).' (Reiser & McCarthy, 2018)	12
Predictor of teacher effectiveness	Instances where increases or decreases in teacher resilience were associated with improvements in instruction or student achievement. This does not include instances where teachers reported more positive self-perceptions or increased confidence in their teaching ability.	Data-driven (inductive)	'She demonstrated resilience in adapting her teaching to meet the diverse needs of her students, and the majority of her students (90%) passed the state physics exam in her second year.' (Nehmeh & Kelly, 2018) 'In total, 69 per cent of teachers who sustained their capacity to be resilient, compared with 59 per cent of those who did not, saw their students achieve results as expected or better than expected in our measures of pupil progress.' (Gu, 2014)	19
Psychological distress	This is an organising sub-theme created to group the sub-codes below.	Data-driven (inductive)	(see sub-codes below)	43

Anxiety	Instances where vulnerability or resilience were associated with increases or decreases in (pathological) anxiety. This does not include teachers reporting feeling anxious at work.	Data-driven (inductive)	'Anxiety and stress were each significantly lower at each follow-up survey (2, 6, and 12 months) compared with baseline (overall P<0.001 and 0.003, respectively).' (Chesak et al., 2019)	4
Burnout	Instances where teacher vulnerability or resilience were associated with risk of burnout or emotional exhaustion.	Theory-driven (deductive)	'[R]ole overload had the largest direct effect on emotional exhaustion (β = .36, p < .01), and role ambiguity had the largest direct effect on job satisfaction (β = –.23, p < .01).' (Richards et al., 2019) 'Similarly, support from colleagues seemed to be important for both job satisfaction and burnout (ranked 4th and 6th and explaining 7.98% and 6.23% respectively), but less so for wellbeing (ranked 8th and explaining 4.19% of explainable variance).' (Ainsworth & Oldfield, 2019)	38
Depression	Instances where teacher vulnerability or resilience were associated with risk of depression or showing depressive symptoms. This does not include teachers reporting feeling lonely at work.	Data-driven (inductive)	'Although participation in MBSR did not significantly lower levels of somatization, depression, or anxiety in this sample, reductions in each symptom category in the direction expected were noted.' (Frank et al., 2015)	3

CULTURAL-STRUCTURAL DIMENSION	This is an organising theme that was created to group the codes and sub-codes below. Cultural factors refer to accepted values, norms, and patterns of behaviour in a given society (Schooler, 1996); this does not pertain to school culture. Structural factors pertain to broader economic, legal, or political systems (such as class, gender, or racial inequalities) that determine an individual or group's position within society (Blau, 1977).	Theory-driven (deductive)	(see codes and sub-codes below)	22
Cultural differences	Discrepancies between a teacher's cultural identity and the cultural values and norms endorsed by one's institutional or social sphere	Data-driven (inductive)	'It was a challenge for her to understand the culture of her students when she viewed her own upbringing as being so decidedly different…' (Kelly et al., 2015) 'Carlos, Ernie, Roger, and Larry also spoke of the difficulty in maintaining their culturally authentic selves within the academy, specifically in their commitment to working with and doing research on communities of color.' (Martinez et al., 2017)	6
Minority identities	This is an organising sub-theme that was created to group the sub-codes below.	Data-driven (inductive)	(see sub-codes below)	18

Gender	Experiences specific to teachers who are a minority, either in the context of their chosen field or broader society, based on their gender.	Data-driven (inductive)	'Such was the case for Henry. And, we added two ascriptions — 'ascription of masculinity' and 'ascription of incompetence' — to the microaggression themes.' (Bryan & Browder, 2013) 'In addition to academic inspiration and collaboration, Women of Color commonly described how relationships with others—and more specifically, with Women of Color as well as with their families—provided the fuel they needed to survive hostile work contexts.' (Gonzales & Terosky, 2020)	8
LGBTQ+	Experiences specific to LGBTQ+ teachers.	Data-driven (inductive)	'Kevin, a faculty member who identifies as gay, stated, "I came in, and it became clear that my chair was rather homophobic… even if that threat is real, or just perceived and not real, it really influences in a negative way.' (Hughes, 2018)	1
Race/ethnicity	Experiences specific to teachers of colour. This code does not apply to instances relating to white teachers teaching students from ethnic minority backgrounds.	Data-driven (inductive)	'She explained how some would "make a racial joke in front of me intentionally and it's a way for them to [I] guess pretend they are down [with] me, being like me, being Asian." One of her colleagues noticed "a student in our department who is white, he has an Asian girlfriend" and said "oh he must have yellow fever, right?"' (Martinez et al., 2017) 'As a result, participants found themselves motivated to become positive role models for the next generations of Native Americans, who might otherwise also lack academic role models.' (Dvorakova, 2018)	14

ORGANISATIONAL-INSTITUTIONAL DIMENSION	This is an organising theme that was developed to group the codes and sub-codes below. This theme refers to policies, processes, and practices enforced at the school, district, or ministry level.	Theory-driven (deductive)	(see codes and sub-codes below)	92
Accountability	Teachers' experiences with accountability mechanisms, such as high-stakes testing or performance inspections.	Theory-driven (deductive)	'Several participants discussed how the state accountability system took control out of the hands of teachers, which led them to feel even more demoralised."' (Richards et al., 2018) 'Former teachers who were in schools where the students' scores were posted, or where teachers were lauded in faculty meetings for having the highest scores on the required state tests felt an atmosphere of competition rather than cooperation.' (Newberry & Allsop, 2017)	22
Compensation	Refers to teachers' salary or benefits	Data-driven (inductive)	'Only two teachers mentioned 'pay' as a positive reason for staying in the profession, but both spoke of pay in the language of necessity, in terms of maintaining a reasonable standard of living and to support dependents, rather than for love of money itself.' (Chiong et al., 2017) 'More importantly, personal factors such as the flexibility of teaching, holidays and the salary were strong motivators in keeping people in teaching.' (Mackenzie, 2012)	7

Formal performance incentives	Refers to incentives such as promotions or teaching awards.	Data-driven (inductive)	'One particularly important boost to her confidence, enthusiasm and commitment was her promotion to the senior leadership team which was seen as recognition for her potential and appreciation of her work from school management.' (Gu & Day, 2013) 'Two themes emerged from the responses to this subquestion, accolades, with the subthemes of awards, honours and rewards, and enthusiasm.' (Mrstik et al., 2019)	5
Geographical accessibility	Experiences of teachers serving populations in difficult-to-reach areas	Data-driven (inductive)	'The hardest part of the travel, he said, came when the weather was bad. Reaching school became dangerous in the rain because the road was slippery and because of the fog.' (C. Santoro, 2017)	1
Infrastructure and physical resources	Refers to both built facilities (e.g., libraries and classrooms) and learning materials (e.g., textbooks).	Data-driven (inductive)	'The metaphors here reflect the tenacity needed to secure even relatively basic equipment.' (Kirk & Wall, 2010) 'In addition to planning for her PE lessons, she had to deal with the presence of cafeteria equipment in her space and constant interruptions from delivery trucks bringing cafeteria supplies into the gym during instruction.' (Ellison & Mays-Woods, 2019a)	12

Professional development	Skills development opportunities provided to teachers. This applies to both formal training and mentoring programmes and informal coaching schemes or communities of practice within the school.	Theory-driven (deductive)	'Approaches included participation in teacher professional development or locally based learning groups, collegiality found within the subject department structure, mentorship schemes, and for some, more personally through experience, resistance, self-efficacy, resilience, and their own confidence.' (O'Sullivan & Goodwyn, 2020)	57
Mentoring	This sub-code applies to both formal and informal mentoring programmes. Code instances where teachers receive mentoring or mentor other teachers.	Data-driven (inductive)	'A characteristic of resilient urban teachers not mentioned in the literature reviewed for this study is mentoring others. The study participants saw value in mentoring others.' (Huisman et al., 2010) 'Participants' data revealed that the role of mentoring, whether through a formal mentor or through informal mentoring networks, contributed to the development of resilience because mentoring helped beginning teachers perceive feelings of acceptance.' (Morettini et al., 2020)	32

School climate and culture	Refers to prevalent norms, values, and practices, which determine the 'atmosphere' of the school. Use this code when the text refers to the school as a whole; for example, a conflictual relationship with the head teacher should be coded under 'school leadership' instead – unless this conflictual relationship is generalised to most teachers in the school, in which case, it should be coded to both 'school leadership' and 'school climate and culture'.	Theory-driven (deductive)	'The culture of the school is highly professional, or as Penny dubbed it, "professional to the point where it is just like a cold, working atmosphere."' (Hirsch, 2018) 'Most teachers described situations when students had carried weapons or look-alike weapons on school grounds, including knives and guns. These situations, although relatively rare, heightened feelings of vulnerability among more than a quarter of teachers.' (Maring & Koblinsky, 2013)	50
School leadership	Refers to school administrators (i.e., head teachers, principals). This can be applied to instances relating to teachers' relationship with their school administrator or to broader policies and practices enforced by school administrators.	Theory-driven (deductive)	'In this first example we show how the professional development and growth of beginning teachers is perceived by them to benefit from the support of strong school leadership and the collaborative school cultures which good leaders create, shape and transform.' (Gu & Day, 2013) 'These supportive relationships were important to each one; the Director had confidence in the teachers and the ALCs teachers knew they could count on her to address their concerns.' (Henderson et al., 2018)	60

Autonomy	Teachers' feelings of control over their practice. Use this code as well for instances where there is perceived lack of control, and co-code it with 'risk factor'.	Data-driven (inductive)	'For example, some teachers felt they had little choice over which literary texts to select but that they could overcome such constraints by focusing on individual student responses and enabling debate and discussion whenever possible.' (O'Sullivan & Goodwyn, 2020) 'Frank (low) explained how: 'the good [principals] understand what you are doing and let you do it. They don't meddle, they don't interfere, the don't micromanage. Instead, they turn the responsibility over to [the teacher].' (Richards et al., 2018)	14
Workload	Refers to the amount of tasks and responsibilities performed by teachers.	Data-driven (inductive)	'The combination of extracurricular activities, multiple course preparations, and perceived lack of control over their personal time led to a more stressful second year than during their first year of teaching.' (Doney, 2013) 'The teachers in this study also reported moderate role overload, suggesting that they, at times, struggled with the performance expectations of their jobs given the available time and resources.' (Wilson et al., 2020)	40
PERSONAL DIMENSION	This is an organising theme that was developed to group the codes and sub-codes below. This refers to individual circumstances, personality traits, values, or competencies.	Theory-driven (deductive)	(see codes and sub-codes below)	93

Family obligations	Refers to teachers' family-related commitments.	Data-driven (inductive)	'During the same period, despite the fact that she was still highly committed to her job, Katherine suffered from serious tensions that arose from managing a busy home and work life simultaneously such that she even considered moving to parttime work.' (Gu & Day, 2013) 'All four participants indicated that taking care of family needs and meeting career demands created stress.' (Doney, 2013)	7
Involvement in hobbies and personal interests	Refers to relaxation by participating in leisure activities.	Data-driven (inductive)	'For example, Elizabeth took horse-riding lessons, visited museums, and joined colleagues at a local bar for drinks. Kimberly also explored the activities for renewal outside of the school context: "I hung out with my friends and with my boyfriend. I read books that have nothing to do with education, [and], you know, just having T.V. shows to watch."' (Castro et al., 2010) 'Dorothy mentioned how spending time with friends and having hobbies helped her to release her stress.' (Day & Hong, 2016)	9

Personal skills and knowledge	This code can be used to refer to both instructional/teaching-related skills and psychological coping skills.	Theory-driven (deductive)	'When student behavior was difficult and challenging, she used classroom humor and teaching strategies that included a course plan to give students practice that would make it possible for them to achieve the course goals.' (Doney, 2013) 'Using a series of regression analyses comparing means between pre- and posttest (Table 4), we found that teachers' self-reported understanding of stress and its consequences (B = .26, SE = .06, p < .001), knowledge on stress reduction techniques (B = .61, SE = .14, p < .001), and actual use of stress reduction strategies (B = .12, SE = .05, p < .05) increased after completing SELF-T.' (Lang et al., 2020)	39
Personal values and motivations	Refers to teachers' personal values and reasons for teaching.	Data-driven (inductive)	'Although "values" were not often explicitly mentioned, they were implicit in much of what participants said not just about their reasons for entering teaching, but in their reasons for remaining in teaching and the continuing relational rewards they received as a result.' (Wilkins & Comber, 2015) 'FOC dealt with such instances in different ways, but many relied on the support and guidance of mentors and advocates, or social capital, while remaining resilient, by drawing on their navigational capital and maintaining their hopes for attaining tenure and/or for utilizing their positions to improve academia for themselves and other FOC.' (Martinez et al., 2017)	48

Making a difference	Teachers' desire to make a difference in their community or their students' lives.	Data-driven (inductive)	'I just love it, just to see the smallest sign of progression, moving a child on, even just a little bit, motivation, building confidence and independence is a big part of how I make a difference in their lives.' (Gu & Day, 2013) 'Karla's entire educational trajectory was grounded in her commitment to Black community uplift, so much so that Karla stated that her academic career was not about her advancement, but about the advancement of the Black community.' (Gonzales & Terosky, 2020)	32
Sense of vocation	A sense of 'calling' to effect moral change through teaching (Hansen, 1994)	Data-driven (inductive)	'In this study, professional factors such as a sense of vocation working with children with SEN are distinct from the factors indicated in previous research.' (Mackenzie, 2012) 'Consistent with the concept of a "vocation," these teachers believed that they were meant to do this work. Many even described how their teaching connected to their life purpose and identity.' (Tricarico et al., 2015)	21

Self-efficacy	Belief in one's own ability to successfully respond to a given circumstance (Bandura, 1977). This can also be coded in instances where teachers report feeling less efficacious; in this case, co-code with "risk factor".	Theory-driven (deductive)	'Their persistence was facilitated to a greater degree by their confidence in their science and mathematics teaching skills, since they had many pedagogical tools with which to differentiate their instruction.' (Kelly et al., 2015) 'We have selected the following quotes as evidence as they reveal teachers' perceptions of a lack of trust in their professional judgement and an accompanying loss of agency, and reduced self and collective efficacy.' (Wilcox & Lawson, 2018)	49
Spirituality	Refers to teachers' faith or belief in a higher power.	Data-driven (inductive)	'Michele also maintained that her faith has given her the strength to deal with dilemmas she has encountered throughout her career and is what guides her today.' (Meister & Ahrens, 2011) 'Their spirituality was experienced through their involvement in organized religion in both the Methodist or Baptist church and their faith, which helped them during times of adversity.' (J. Taylor, 2013)	6

PROTECTIVE FACTOR	Individual or contextual attributes or conditions that help the teacher cope with challenging circumstances. Whenever a factor within one of the dimensions is coded, it should be co-coded either as a “protective factor” or “risk factor”. If the direction of the relationship with resilience is not stated, co-code as both “protective factor” and “risk factor”	Theory-driven (deductive)	‘Alison illustrated the “urge to serve”. For Alison, her resilience was maintained by putting events in the context of her own life, as well as being an advocate for children.’ (Mackenzie, 2012) ‘Bayani described the importance of finding a community that remained hopeful, while doing the challenging work of transforming schools: “I think it’s important that we continue to reach out, we find ways of coping, ways of healing, ways of liberating yourself, ways of finding hope in spaces that are not as supportive.” (Pizarro & Kohli, 2020)	102
RISK FACTOR	Individual or contextual attributes or conditions that make a teacher more vulnerable to stress. Whenever a factor within one of the dimensions is coded, it should be co-coded either as a “protective factor” or “risk factor”. If the direction of the relationship with resilience is not stated, co-code as both “protective factor” and “risk factor”	Theory-driven (deductive)	‘They cited, for instance, problems with children’s behaviour, rude parents, pressure from senior leadership over learning outcomes and assessment, or a general lack of support from the school.’ (Allen et al., 2017) ‘In addition, Barbara also encountered stress due to the high turnover rates in administration and school faculty that was a part of the school’s history as well as limited programs available for novice teachers to ease the transition from university to classroom.’ (Doney, 2013)	82

SOCIAL DIMENSION	This is an organising theme that was developed to group the codes below. This refers to teachers' relationships with other people in their personal and professional lives.	Theory-driven (deductive)	(see codes below)	87
Feelings of isolation	This could refer to feelings of 'ideological' isolation, or physical isolation (i.e., limited contact with colleagues)	Data-driven (inductive)	'In two instances, participants reflected that, while providing them with autonomy, self-contained teaching also isolated them.' (Belknap & Taymans, 2015) 'As teachers, our participants felt isolated physically, emotionally, or philosophically from their colleagues.' (Newberry & Allsop, 2017)	21
Professional recognition	Refers to teachers feeling valued and appreciated by their peers. When teachers do not feel valued, this should be co-coded with "risk factor".	Data-driven (inductive)	'Further, APE teachers believed that their discipline mattered in their respective schools to a greater extent (M = 2.64, SD = .69) than their counterparts believed that PE mattered in theirs (M = 2.48, SD = .80), F(1,648) = 6.08, p = .014; partial-η2 = .01.' (Wilson et al., 2020) 'In several cases, participants said that their feelings in the classroom and how students viewed them depended largely on the tone set by their co-teacher. Participants felt good about themselves and felt more effective if they felt respected and had a sense of parity in the classroom.' (Belknap & Taymans, 2015)	30

Relationships with colleagues	Teachers' relationships with fellow teachers in their school.	Data-driven (inductive)	'For example, when asked about whether she felt supported by her teacher colleagues, Monica, a first-year middle school science teacher who received her certification through an alternate route program, said, "I feel like I'm part of a team already"' (Morettini et al., 2020) 'Frank (low) was happy at Lurcroy Middle School, but noted challenges in a previous environment: "I was miserable at [my last school] and I wanted to leave. There was hostility among the teachers because the principal made everything competitive. She would call out teacher who did good work and criticize those who didn't."' (Richards et al., 2018)	69
Relationships with students	Teachers' relationships with their students.	Data-driven (inductive)	'However, in exhibiting her agency, she also experienced resistance from some students. "One of my students this semester said to one of her colleagues [peers] that she didn't like how I went from ghetto to professor in the classroom, and that got back to me."' (Martinez et al., 2017) 'First among these were the good relationships which she enjoyed with her pupils. She felt that the general improvement of children across the school had enhanced her relationships with the pupils in her class.' (Gu & Day, 2013)	45

Support from friends and family	Teachers' relationships with their friends and family.	Data-driven (inductive)	'Family members, including parents, spouses/partners, and children, were another important source of resilience for participants.' (Hughes, 2018) 'Doug, Michele, John, and Beth have also turned to their families when they needed support.' (Meister & Ahrens, 2011)	17

Appendix C: Roster of included articles

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Ainsworth & Oldfield	2019	Quantifying teacher resilience: Context matters	Teaching and Teacher Education	UK	ECCE, primary, secondary	Non-specific	Descriptive quantitative (survey)
Allen et al.	2017	Catching them early: identifying potential early-career leavers	Teacher Education Advancement Network Journal	UK	Primary	Non-specific	Descriptive quantitative (survey)
Beck et al.	2020	"We need to be in the classroom more": Veteran teachers' views on teacher preparation and retention	The Professional Educator	US	Secondary	Low income, ethnic minority	Qualitative (semi-structured interview)
Belknap & Tymans	2015	Risk and resilience in beginning special education teachers	Journal of Special Education Apprenticeship	US	Secondary	Learners with special needs	Qualitative (semi-structured interview)
Benjamin & Black	2012	Resilience theory: Risk and protective factors for novice special education teachers	Journal of the American Academy of Special Education Professionals	US	Not specified	Learners with special needs	Qualitative (semi-structured interview)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Bryan & Bowder	2013	“Are you sure you know what you are doing?”—The lived experiences of an African American male kindergarten teacher	Interdisciplinary Journal of Teaching and Learning	US	ECCE	Ethnic minority, gender minority	Qualitative (semi-structured interview)
Carlson	2019	Resilience in community: Relational learning in a small congregational school	Journal of Jewish Education	US	Not specified	Non-specific	Qualitative (multi-method)
Carson et al.	2017	An ecological momentary assessment of burnout, rejuvenation strategies, job satisfaction, and quitting intentions in childcare teachers	Early Childhood Education Journal	US	ECCE	Non-specific	Descriptive quantitative (survey)
Castro et al.	2010	Resilience strategies for new teachers in high-needs areas	Teaching and Teacher Education	US	Primary, secondary	Low-income, learners with special needs	Qualitative (semi-structured interview)
Chan & Dennis	2019	Resilience: insights from medical educators	The Clinical Teacher	UK	Tertiary	Non-specific	Qualitative (survey)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Chesak et al.	2019	Stress Management and Resiliency Training for public school teachers and staff: A novel intervention to enhance resilience and positively impact student interactions	Complementary Therapies in Clinical Practice	US	Primary, secondary	Non-specific	Quasi-experimental
Chiong et al.	2017	Why do long-serving teachers stay in the teaching profession? Analysing the motivations of teachers with 10 or more years' experience in England	British Educational Research Journal	UK	ECCE, primary, secondary	Non-specific	Mixed methods
Cook et al.	2017	Promoting secondary teachers' well-being and intentions to implement evidence-based practices: Randomized evaluation of the ACHIEVER resilience curriculum	Psychology in the Schools	US	Secondary	Low-income	RCT
Curran et al.	2017	Teacher victimization, turnover, and contextual factors promoting resilience	Journal of School Violence	US	Primary, secondary	Non-specific	Descriptive quantitative (survey)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Damico et al.	2018	"Show me what it's supposed to look like": Exploring mindfulness-based support for early-career teachers in an era of neoliberal reform	Policy Futures in Education	US	ECCE, primary	Low-income, ethnic minority	Qualitative (focus group discussion)
Day & Hong	2016	Influences on the capacities for emotional resilience of teachers in schools serving disadvantaged communities: Challenges of living on the edge	Teaching and Teacher Education	UK	ECCE, primary	Low-income	Qualitative (semi-structured interview)
Del Rosario et al.	2018	Work-related factors as determinants of self-efficacy and resilience among selected Filipino child development workers	IAFOR Journal of Education	Philippines	ECCE	Non-specific	Descriptive quantitative (survey)
Dollarhide et al.	2018	Social justice and resilience for African American male counselor educators	Counselor Education and Supervision	US	Tertiary	Ethnic minority	Qualitative (semi-structured interview)
Doney	2013	Fostering resilience: A necessary skill for teacher retention	Journal of Science Teacher Education	US	Secondary	Non-specific	Qualitative (multi-method)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Douglass	2014	Resilience in change: Positive perspectives on the dynamics of change in early childhood systems	Journal of Early Childhood Research	US	ECCE	Non-specific	Qualitative (multi-method)
Doyle et al.	2019	Exploring relationships between CARE program fidelity, quality, participant responsiveness, and uptake of mindful practices	Mindfulness	US	Primary, secondary	Non-specific	Descriptive quantitative (multi-method)
Drew & Sosnowski	2019	Emerging theory of teacher resilience: A situational analysis	English Teaching: Practice and Critique	US	Secondary	Non-specific	Qualitative (focus group discussion)
Duke et al.	2020	Institutional factors associated with burnout among assistant professors	Teaching and Learning in Medicine	US	Tertiary	Non-specific	Descriptive quantitative (survey)
Dvorakova	2018	Negative stereotypes deconstructed and transformed in the experience of Native American academics	American Journal of Education	US	Tertiary	Ethnic minority	Qualitative (semi-structured interview)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Easterly & Myers	2017	Personal resilience as a predictor of professional development engagement and career satisfaction of agriscience teachers	Journal of Agricultural Education	US	Secondary	Non-specific	Descriptive quantitative (survey)
Ellison & Mays-Woods	2019a	In the face of adversity: four physical educators' experiences of resilience in high-poverty schools	Physical Education and Sport Pedagogy	US	Primary, secondary	Low-income	Qualitative (multi-method)
Ellison & Mays-Woods	2019b	Physical education teacher resilience in high poverty school environments	European Physical Education Review	US	Primary, secondary	Low-income	Qualitative (multi-method)
Frank et al.	2015	The effectiveness of mindfulness-based stress reduction on educator stress and well-being: A pilot study	Mindfulness	US	Secondary	Non-specific	Quasi-experimental
Fulton et al.	2020	Exploring the term "resilience" as understood and experienced by dental educators	European Journal of Dental Education	UK	Tertiary	Non-specific	Qualitative (semi-structured interview)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Ganotice et al.	2016	In search for H.E.R.O. among Filipino teachers: The relationship of positive psychological capital and work-related outcomes	Asia-Pacific Education Researcher	Philippines	Tertiary	Non-specific	Descriptive quantitative (survey)
Garcia & Gomez	2017	Player professional development: A case study of teacher resilience within a community of practice	Teaching and Teacher Education	US	Secondary	Low-income, ethnic minority	Qualitative (ethnography)
Gloria et al.	2013	Positive affectivity predicts successful and unsuccessful adaptation to stress	Motivation and Emotion	US	Primary, secondary	Non-specific	Descriptive quantitative (survey)
Gonzales & Terosky	2019	On their own terms: Women's pathways into and through academe	Journal of Diversity in Higher Education	US	Tertiary	Gender minority	Qualitative (semi-structured interview)
Grenville-Cleave & Boniwell	2012	Surviving or thriving? Do teachers have lower perceived control and well-being than other professions?	Management in Education	UK	Not specified	Non-specific	Mixed methods
V. Griffiths	2011	Career changers and fast-track induction: teacher perspectives on their early professional development	Teacher Development	UK	Primary, secondary	Non-specific	Qualitative (semi-structured interview)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
A. Griffiths	2014	Promoting resilience in schools: a view from occupational health psychology	Teachers and Teaching	UK	Primary, secondary	Non-specific	Qualitative (semi-structured interview)
Gu	2014	The role of relational resilience in teachers' career-long commitment and effectiveness	Teachers and Teaching	UK	Primary, secondary	Non-specific	Qualitative (semi-structured interview)
Gu & Day	2013	Challenges to teacher resilience: Conditions count	British Educational Research Journal	UK	Primary, secondary	Low income, ethnic minority	Qualitative (multi-method)
Henderson et al.	2018	Modeling resilience in an alternative education context	Urban Review	US	NFE	Low-income, ethnic minority	Qualitative (multi-method)
Hirsch	2018	Emotions in charter school teaching: Three stories from year one	LEARNing Landscapes	US	Primary	Low-income, ethnic minority	Qualitative (multi-method)
Hong	2012	Why do some beginning teachers leave the school, and others stay? Understanding teacher resilience through psychological lenses	Teachers and Teaching	US	Secondary	Non-specific	Qualitative (semi-structured interview)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Horton-Deutsch et al.	2010	Becoming a nurse faculty leader: Facing challenges through reflecting, persevering, and relating in new ways	Journal of Nursing Management	US	Tertiary	Non-specific	Qualitative (unstructured interview)
Hughes	2017	Resilience of grassroots leaders involved in LGBT issues at a Catholic university	Journal of Student Affairs Research and Practice	US	Tertiary	LGBTQ+	Qualitative (semi-structured interview)
Huisman et al.	2010	Resiliency to success: Supporting novice urban teachers	Teacher Development	US	Primary	Low-income, ethnic minority	Qualitative (semi-structured interview)
Jennings et al.	2013	Improving classroom learning environments by Cultivating Awareness and Resilience in Education (CARE): Results of a randomized controlled trial	School Psychology Quarterly	US	Primary, secondary	Non-specific	RCT
Jennings et al.	2017	Impacts of the CARE for Teachers Program on teachers' social and emotional competence and classroom interactions	Journal of Educational Psychology	US	ECCE, primary	Low-income	RCT

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Jennings et al.	2019	Long-term impacts of the CARE program on teachers' self-reported social and emotional competence and well-being	Journal of School Psychology	US	ECCE, primary	Low-income	RCT
Jennings et al.	2011	Improving classroom learning environments by Cultivating Awareness and Resilience in Education (CARE): Results of two pilot studies	Journal of Classroom Interaction	US	Primary	Low-income, ethnic minority	Quasi-experimental
Johnson et al.	2018	An examination of stressors, strain, and resilience in academic and non-academic UK university job roles	International Journal of Stress Management	UK	Tertiary	Non-specific	Descriptive quantitative (survey)
Kadi-Hanifi & Keenan	2016	Finding the 'a-ha' moment: An exploration into HE in FE teacher self-concept	Research in Post-Compulsory Education	UK	TVET	Non-specific	Qualitative (unstructured interview)
Kelly et al.	2015	First-year urban mathematics and science middle school teachers: Classroom challenges and reflective solutions	Education and Urban Society	US	Secondary	Low-income, ethnic minority	Qualitative (multi-method)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Khan et al.	2020	Is grit hurting you? The dark side of psychological resources in goal pursuit	Applied Psychology	US	Tertiary	Non-specific	Descriptive quantitative (survey)
Kirk & Wall	2010	Resilience and loss in work identities: a narrative analysis of some retired teachers' work-life histories	British Educational Research Journal	UK	Primary, secondary	Non-specific	Qualitative (oral life history)
Lang et al.	2020	Social-Emotional Learning for Teachers (SELF-T): A short-term online intervention to increase early childhood educators' resilience	Early Education and Development	US	ECCE	Non-specific	Quasi-experimental
Larson et al.	2018	Stressed teachers don't make good implementers: Examining the interplay between stress reduction and intervention fidelity	School Mental Health	US	ECCE	Low-income, ethnic minority	Quasi-experimental
Luthar & Mendes	2020	Trauma-informed schools: Supporting educators as they support the children	International Journal of School and Educational Psychology	US	ECCE, primary, secondary	Non-specific	Qualitative (survey)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Mackenzie	2012	I can't imagine doing anything else': why do teachers of children with SEN remain in the profession? Resilience, rewards and realism over time	Journal of Research in Special Educational Needs	UK	Primary, secondary	Learners with special needs	Qualitative (semi-structured interview)
Maratos et al.	2019	Evaluation of a compassionate mind training intervention with school teachers and support staff	Mindfulness	US	Secondary	Learners with special needs	Mixed methods
Maring & Koblinsky	2013	Teachers' challenges, strategies, and support needs in schools affected by community violence: A qualitative study	Journal of School Health	US	Secondary	Low-income, ethnic minority	Qualitative (semi-structured interview)
Martinez et al.	2017	Assistant professors of color confront the inequitable terrain of academia: A community cultural wealth perspective	Race, Ethnicity and Education	US	Tertiary	Ethnic minority	Qualitative (semi-structured interview)
McIntyre	2010	Why they sat still: The ideas and values of long-serving teachers in challenging inner-city schools in England	Teachers and Teaching	UK	ECCE, primary, secondary	Low-income	Qualitative (semi-structured interview)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Meister & Ahrens	2011	Resisting plateauing: Four veteran teachers' stories	Teachers and Teaching	US	Primary, secondary	Non-specific	Qualitative (semi-structured interview)
Mintrop & Charles	2017	The formation of teacher work teams under adverse conditions: Towards a more realistic scenario for schools in distress	Journal of Educational Change	US	Secondary	Low-income	Qualitative (multi-method)
Morettini et al.	2020	Building beginning teacher resilience: Exploring the relationship between mentoring and contextual acceptance	The Educational Forum	US	Primary, secondary	Low-income, rural	Qualitative (semi-structured interview)
Morrell-Scott	2017	The perceptions of acceptance by new academics to a higher education institution	Journal of Further and Higher Education	UK	Tertiary	Non-specific	Qualitative (semi-structured interview)
Mrstik et al.	2019	Combating special educator attrition: Mentor teachers' perceptions of job satisfaction, resiliency, and retention	Australasian Journal of Special and Inclusive Education	US	Primary, secondary	Learners with special needs	Qualitative (semi-structured interview)
Nehmeh & Kelly	2018	Urban science teachers in isolation: Challenges, resilience, and adaptive action	Journal of Science Teacher Education	US	Secondary	Low-income, ethnic minority	Qualitative (semi-structured interview)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Newberry & Allsop	2017	Teacher attrition in the USA: The relational elements in a Utah case study	Teachers and Teaching	US	Primary, secondary	Non-specific	Qualitative (multi-method)
Norton & Griffith	2020	The impact of delivering mindfulness-based programmes in schools: A qualitative study	Journal of Child and Family Studies	UK	Primary, secondary	Non-specific	Qualitative (semi-structured interview)
O'Keeffe	2015	Creation of a personality garden - a tool for reflection and teacher development: An autoethnographical research paper	Nurse Education Today	UK	Tertiary	Non-specific	Qualitative (autoethnography)
O'Sullivan & Goodwyn	2020	Contested territories: English teachers in Australia and England remaining resilient and creative in constraining times	English in Education	UK	Primary, secondary	Non-specific	Qualitative (semi-structured interview)
Oakes et al.	2013	Three-tiered models of prevention: Teacher efficacy and burnout	Education and Treatment of Children	US	Secondary	Low-income	Quasi-experimental
Olson & Roberts	2020	Navigating barriers as special education teacher educators	Research and Practice for Persons with Severe Disabilities	US	Tertiary	Learners with special needs	Qualitative (semi-structured interview)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Pizzarro & Kohli	2020	“I stopped sleeping”: Teachers of color and the impact of racial battle fatigue	Urban Education	US	Primary, secondary	Low-income, ethnic minority	Qualitative (counterstorytelling)
Polidore et al.	2010	Teaching experiences of African American educators in the rural South	The Qualitative Report	US	Primary, secondary	Ethnic minority, rural	Qualitative (multi-method)
Post et al.	2020	Fostering resilience in classrooms through child-teacher relationship training	International Journal of Play Therapy	US	ECCE	Low-income, ethnic minority	Qualitative (semi-structured interview)
Prather-Jones	2011	How school administrators influence the retention of teachers of students with emotional and behavioral disorders	The Clearing House	US	Primary, secondary	Learners with special needs	Qualitative (semi-structured interview)
Rabin & Smith	2012	Stories from five decades: How one teacher's theatricality, courage, and creativity shaped a life's work	Action in Teacher Education	US	ECCE	Non-specific	Qualitative (multi-method)
Reeder	2020	Commitment among adjunct faculty	Journal of Applied Research in Higher Education	US	Tertiary	Non-specific	Descriptive quantitative (survey)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Reiser & McCarthy	2018	Preliminary investigation of a stress prevention and mindfulness group for teachers	Journal for Specialists in Group Work	US	Secondary	Non-specific	Mixed methods
Richards et al.	2018	Personal and contextual factors related to teachers' experience with stress and burnout	Teachers and Teaching	US	Primary, secondary	Non-specific	Qualitative (semi-structured interview)
Richards et al.	2016	The impact of resilience on role stressors and burnout in elementary and secondary teachers	Social Psychology of Education	US	Primary, secondary	Non-specific	Descriptive quantitative (survey)
Richards et al.	2019	Exploring the influence of perceived mattering, role stress, and emotional exhaustion on physical education teacher/coach job satisfaction	European Review of Physical Education	US	Primary, secondary	Non-specific	Descriptive quantitative (survey)
Robertson-Kraft & Duckworth	2014	True grit: Trait-level perseverance and passion for long-term goals predicts effectiveness and retention among novice teachers	Teachers College Record	US	Primary, secondary	Low-income	Descriptive quantitative (scoring instrument)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Santoro, C.	2017	My classroom: Philippines	English Teaching Forum	Philippines	Primary	Indigenous peoples, learners with special needs	Qualitative (data collection method unclear)
Santoro, D.A.	2011	Good teaching in difficult times: Demoralization in the pursuit of good work	American Journal of Education	US	Primary	Low-income, ethnic minority	Qualitative (semi-structured interview)
Schussler et al.	2016	Improving teacher awareness and well-being through CARE: A qualitative analysis of the underlying mechanisms	Mindfulness	US	Primary, secondary	Non-specific	Qualitative (focus group discussion)
Schussler et al.	2018	Stress and release: Case studies of teacher resilience following a mindfulness-based intervention	American Journal of Education	US	Primary	Non-specific	Qualitative (semi-structured interview)
Schussler et al.	2019	The relationship between adopting mindfulness practice and reperceiving: A qualitative investigation of CARE for Teachers	Mindfulness	US	Primary	Non-specific	Qualitative (semi-structured interview)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Schussler et al.	2020	A qualitative investigation of a mindfulness-based yoga program for educators: How program attendance relates to outcomes	Psychology in the Schools	US	Secondary	Non-specific	Qualitative (focus group discussion)
Sharp & Jennings	2016	Strengthening teacher presence through mindfulness: What educators say about the Cultivating Awareness and Resilience in Education (CARE) Program	Mindfulness	US	Primary, secondary	Non-specific	Qualitative (semi-structured interview)
Sossick et al.	2019	The impact of a coaching project on the resilience of Newly Qualified Teachers	Teacher Education Advancement Network Journal	UK	Primary, secondary	Non-specific	Qualitative (focus group discussion)
Soulen	2020	School librarian interventions for new teacher resilience: A CLASS II field study	School Library Research	US	Primary, secondary	Non-specific	Mixed methods
Steuber et al.	2019	Grit in pharmacy faculty: A pilot analysis focused on productivity measures	Currents in Pharmacy Teaching and Learning	US	Tertiary	Non-specific	Descriptive quantitative (survey)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Stoiber & Gettinger	2011	Functional assessment and positive support strategies for promoting resilience: Effects on teachers and high-risk children	Psychology in the Schools	US	ECCE, primary	Non-specific	RCT
Susman-Stillman et al.	2020	Reflective supervision/consultation and early childhood professionals' well-being: A qualitative analysis of supervisors' perspectives	Early Education and Development	US	ECCE	Non-specific	Qualitative (survey)
Taylor	2013	The power of resilience: A theoretical model to empower, encourage, and retain teachers	The Qualitative Report	US	Primary, secondary	Ethnic minority, rural	Qualitative (semi-structured interview)
Taylor & Newberry	2018	Self-study of a teacher's practices of and experience with emotion regulation: Being and becoming through reflection and engagement	Studying Teacher Education	US	Primary	Non-specific	Qualitative (multi-method)
Thorburn	2011	‘Still Game’: An analysis of the life history and career disappointments of one veteran male teacher of physical education in Scotland	Educational Review	UK	Secondary	Low-income	Qualitative (semi-structured interview)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Tricarico et al.	2015	Reflection on their first five years of teaching: understanding staying and impact power	Teachers and Teaching	US	Primary	Low-income, ethnic minority	Qualitative (multi-method)
Turner	2015	Learning to supervise: four journeys	Innovations in Education and Teaching International	UK	Tertiary	Non-specific	Qualitative (visual method)
Werhan	2010	Men as FCS teachers: An exploration of a gendered profession	Journal of Family and Consumer Services	US	Secondary	Gender minority	Qualitative (semi-structured interview)
Whitfield	2019	Moving beyond the 'initial' in Initial Teacher Education: The role of ITE providers in supporting and developing new teachers	Teacher Education Advancement Network Journal	UK	Primary, secondary	Non-specific	Qualitative (multi-method)
Wilcox & Lawson	2018	Teachers' agency, efficacy, engagement, and emotional resilience during policy innovation implementation	Journal of Educational Change	US	Primary, secondary	Low-income, ethnic minority	Qualitative (focus group discussion)
Wilcoxen et al.	2020	Empowerment through induction: Supporting the well-being of beginning teachers	International Journal of Mentoring and Coaching in Education	US	ECCE, primary, secondary	Non-specific	Qualitative (survey)

Author(s)	Year	Title	Journal	Country of interest	Sub-sector(s)	Population	Method(s)
Wilkins & Comber	2015	‘Elite’ career-changers in the teaching profession	British Educational Research Journal	UK	Primary, secondary	Non-specific	Qualitative (semi-structured interview)
Wilson et al.	2020	Perceived workplace experiences of adapted physical educators and physical educators	Research Quarterly for Exercise and Sport	US	Primary, secondary	Non-specific	Descriptive quantitative (survey)
Woods & Lynn	2014	One physical educator's career cycle: Strong start, great run, approaching finish	Research Quarterly for Exercise & Sport	US	Primary, secondary	Non-specific	Qualitative (semi-structured interview)
Wright	2018	Contesting hegemony: Re-imagining masculinities for early childhood education	Contemporary Issues in Early Childhood	US	ECCE	Gender minority	Qualitative (autoethnography)
Yonezawa et al.	2011	Teacher resilience in urban schools: The importance of technical knowledge, professional community, and leadership opportunities	Urban Education	US	Primary, secondary	Low-income, ethnic minority	Qualitative (semi-structured interview)

Appendix D: Appraisal – RCTs

	Clear RQs?	Data collected answers RQs?	Randomisation performed appropriately?	Groups comparable at baseline?	Complete outcome data?	Outcome assessors blinded?	Participants adhered to intervention?	Comments
Cook et al. (2017)	Yes	Yes	Somewhat	Yes	Yes	Yes	Yes	Randomisation procedure thoroughly explained. Pairs determined by matching individuals with similar pre-test scores; each member of the pair was then assigned to a treatment. However, self-selection bias is likely: participating teachers volunteered to attend training. Preliminary analyses showed similar baseline characteristics, except for Job Satisfaction. To control for this, analysis of covariance (ANCOVA) was used. Participants were the assessors. Participant blinding is impossible since they take an active part in the intervention; this was not taken against the study.

	Clear RQs?	Data collected answers RQs?	Randomisation performed appropriately?	Groups comparable at baseline?	Complete outcome data?	Outcome assessors blinded?	Participants adhered to intervention?	Comments
Jennings et al. (2013)	Yes	Yes	Somewhat	Yes	Yes	Yes	Yes	Participants matched based on demographic characteristics and then randomly assigned to the treatment or waitlist group. No active control group (i.e., control group simply did not receive an intervention); possible that treatment effect is due only to attention received by participants, not the actual treatment. Only 5% of participant data contained missing values. Listwise deletion used to eliminate missing values. Independent samples t-test administered to show that treatment and "control" group have similar baseline scores. ANCOVA used to control for effect of potential differences in pre-test scores. Baseline sample characteristics similar to population. Participants were the assessors. Participant blinding is impossible since they take an active part in the intervention; this was not taken against the study.

	Clear RQs?	Data collected answers RQs?	Randomisation performed appropriately?	Groups comparable at baseline?	Complete outcome data?	Outcome assessors blinded?	Participants adhered to intervention?	Comments
Jennings et al. (2017)	Yes	Yes	Somewhat	Yes	Yes	Yes	Yes	Participants randomised across school using a computerised random number generator. Self-selection bias possible since participants volunteered to take part in the intervention. Slight deviations in sample characteristics and population characteristics. Preliminary analyses showed no significant differences in baseline characteristics of treatment and "control" group. No active control group (i.e., control group simply did not receive an intervention); possible that treatment effect is due only to attention received by participants, not the actual treatment. Low attrition at 7%. Tested and showed that missingness of values is random. Missing values replaced through full information maximum likelihood estimation (FIMLE) procedure. Classroom observers were blind to group assignment.

	Clear RQs?	Data collected answers RQs?	Randomisation performed appropriately?	Groups comparable at baseline?	Complete outcome data?	Outcome assessors blinded?	Participants adhered to intervention?	Comments
Jennings et al. (2019)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Participants randomised across school using a computerised random number generator. Control group also received the intervention, but delayed. Sample characteristics show heterogeneity, but no indication of how representative this is of population characteristics. Preliminary analyses showed no significant differences in baseline characteristics of treatment and "control" group. Low attrition between pre-test and follow-up at 12.9%. Tested and showed that missingness of values is random. Missing values replaced through FIMLE procedure.

	Clear RQs?	Data collected answers RQs?	Randomisation performed appropriately?	Groups comparable at baseline?	Complete outcome data?	Outcome assessors blinded?	Participants adhered to intervention?	Comments
Stoiber & Gettinger (2011)	Yes	Yes	Somewhat	Yes	Yes	Yes	Yes	Original intention was to randomise classrooms into the treatment or control group, but district leaders insisted on randomising based on district. As such, true randomisation was not achieved. Treatment and control groups have comparable baseline characteristics. Sample characteristics show heterogeneity. No missing values reported. Participants were the assessors. Participant blinding is impossible since they take an active part in the intervention; this was not taken against the study.

Appendix E: Appraisal – Quasi-experimental studies

	Clear RQs?	Data collected answers RQs?	Sample representative ?	Appropriate measurements ?	Complete outcome data?	Confounders accounted for?	Intervention administered as intended?	Comments
Chesak et al. (2019)	Yes	Yes	No	Yes	No	No	Somewhat	Small sample size. Certain demographics are under-represented in the sample. Clearly defined variables. Surveys tested for reliability and validity. Self-reports appropriate since outcomes pertain to subjectively experienced mental states. Only 54.5% of the analysis set completed all three follow-up assessments. Non-response bias likely. Potential confounding variables not identified. No statistical controls against confounding variables mentioned. Participants given access to online courses; whether or not they took said courses was not tracked. Availing (or not availing) of said courses would have potential impact on outcomes. This should have been tracked.

	Clear RQs?	Data collected answers RQs?	Sample representative ?	Appropriate measurements ?	Complete outcome data?	Confounders accounted for?	Intervention administered as intended?	Comments
Frank et al. (2015)	Yes	Yes	Yes	Yes	Somewhat	No	Yes	Baseline characteristics across two groups tested and reported to be similar. Sample demographically matched with school-level characteristics. Clearly defined variables. Existing surveys used. Reliability measures reported. Self-reports appropriate since outcomes pertain to subjectively experienced mental states. "Relatively low levels" of missing data reported, but no specific value is given. Listwise deletion used to eliminate missing data. Potential confounding variables not identified. No statistical controls against confounding variables mentioned.
Jennings et al. (2011)	Yes	Yes	No	Yes	Yes	No	Yes	Small sample size. Sample characteristics provided. Certain demographics were under-represented in the sample. Clearly defined variables. Existing pre-validated surveys used. Reliability measures reported. Self-reports appropriate since outcomes pertain to subjectively experienced mental states. No missing data reported. Potential confounding variables not identified. No statistical controls against confounding variables mentioned.

	Clear RQs?	Data collected answers RQs?	Sample representative ?	Appropriate measurements ?	Complete outcome data?	Confounders accounted for?	Intervention administered as intended?	Comments
Lang et al. (2020)	Yes	Yes	No	Somewhat	Somewhat	Yes	Somewhat	Small sample size. Sample characteristics provided. Certain demographics are not represented in the sample. Used a mix of existing surveys and new surveys. Reliability and validity measures tested and reported in all instances. Participants given access to online courses; whether or not they took said courses was not tracked. However, engagement in courses measured only through self-reports. No way of ascertaining if participants took online courses as intended; only data source is self-reporting. Missing data diagnostics not reported, but FIMLE procedure used to replace missing values. Confounding variables identified. Controlled as covariates in the regression model.

	Clear RQs?	Data collected answers RQs?	Sample representative ?	Appropriate measurements ?	Complete outcome data?	Confounders accounted for?	Intervention administered as intended?	Comments
Larson et al. (2018)	Yes	Yes	No	Somewhat	Yes	No	Yes	Multiple gating procedure based on pre-set criteria used to obtain sample (purposive sampling); small sample cannot be said to be representative. Variables are clearly defined. Used both new and existing surveys; the latter have been pre-tested for validity and reliability. No reliability and validity measures reported for new survey. Intervention fidelity reported only via self-report. Data for all four participants complete. Potential confounding variables not identified. No statistical controls against confounding variables mentioned.
Oakes et al. (2013)	Yes	Yes	Yes	Yes	Somewhat	No	Yes	Sample characteristics provided; good level of heterogeneity. Existing surveys used, all pre-tested for validity and reliability. Reliability and validity measures reported. Self-reports are appropriate measures since outcomes pertain to subjectively experienced mental states. 27% attrition rate between pre-test and post-test. Potential confounding variables not identified. No statistical controls against confounding variables mentioned.

Appendix F: Appraisal – mixed-methods studies

	Clear RQs?	Data collected answers RQs?	Adequate rationale for mixed methods design?	Quantitative and qualitative integrated?	Outputs of integration adequately interpreted?	Divergences between quantitative and qualitative findings addressed?	Adheres to both quantitative and qualitative research standards?	Comments
Chiong et al. (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Somewhat	Survey findings theoretically informed the qualitative data collection and coding process. Researchers explained connections between related findings from quantitative and qualitative data. There were efforts to minimise bias in quantitative data collection and analysis. Survey sample adequately heterogeneous. Questionnaires tested for face validity (but not construct validity and reliability). Thick descriptions of qualitative data were provided. No divergences reported between quantitative and qualitative findings.

	Clear RQs?	Data collected answers RQs?	Adequate rationale for mixed methods design?	Quantitative and qualitative integrated?	Outputs of integration adequately interpreted?	Divergences between quantitative and qualitative findings addressed?	Adheres to both quantitative and qualitative research standards?	Comments
Grenville-Cleave & Boniwell (2012)	No							Study aims to "explore teachers' well-being in comparison with other professional groups". It is unclear what exactly this "exploration" entails. The hypotheses do not directly respond to the RQ. Therefore, this study was not taken forward for further appraisal.
Maratos et al. (2019)	Yes	Yes	Yes	Yes	Yes	Yes	Somewhat	Statistical controls were employed to limit effect of potential confounding variables. However, there is no control group, so it cannot be ascertained that treatment effect is actually due to treatment. Quantitative method allowed for testing of intervention effectiveness; qualitative method allowed for exploration of school-level sources of stress and how mindfulness helped teachers cope with stressors. Reporting of qualitative data included quotes from participant responses. No divergences reported between quantitative and qualitative findings.

	Clear RQs?	Data collected answers RQs?	Adequate rationale for mixed methods design?	Quantitative and qualitative integrated?	Outputs of integration adequately interpreted?	Divergences between quantitative and qualitative findings addressed?	Adheres to both quantitative and qualitative research standards?	Comments
Reiser & McCarthy (2018)	Yes	Yes	Yes	Yes	Yes	Yes	Somewhat	Quantitative method allowed for testing of intervention effectiveness; qualitative method allowed for exploration of participants' experiences of responding to stress, following the intervention. Voluntary participation in intervention means possibility of self-selection bias. Sample potentially non-representative of population. 30% attrition between pre-test and post-test. Self-reports appropriate since outcomes pertain to subjectively experienced mental states. ANCOVA used to control for pre-test scores. Potential for social desirability bias in responding to interviews. Quotes from participant responses were provided to substantiate themes extracted in the qualitative findings. No divergences reported between qualitative and quantitative findings.

	Clear RQs?	Data collected answers RQs?	Adequate rationale for mixed methods design?	Quantitative and qualitative integrated?	Outputs of integration adequately interpreted?	Divergences between quantitative and qualitative findings addressed?	Adheres to both quantitative and qualitative research standards?	Comments
Soulen (2020)	Yes	Yes	Yes	Yes	Yes	Yes	No	Quantitative method allowed demonstration of changes in target outcomes from pre-test to post-test. Qualitative method elicited examples of behavioural changes, following intervention. Identified the potential moderating effect of age on reported levels of resilience. No discussion of how individual differences (e.g., coaching style) between intervention implementers were controlled. This should be noted since this can affect intervention outcomes. No discussion of intervention fidelity. No active control group means it is difficult to ascertain if treatment effect is actually due to treatment, or just the added attention received by participants. The paper could have benefitted from more illustrative quotes to substantiate qualitative findings.

Appendix G: Appraisal – descriptive quantitative studies

	Clear RQs?	Data collected answers RQs?	Appropriate sampling strategy?	Sample representative?	Appropriate measurements?	Risk of non-response bias low?	Statistical tests appropriate?	Comments
Ainsworth & Oldfield (2019)	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Non-probability sampling: teachers participated by accessing a link sent through their respective schools. Sample characteristics described; good level of heterogeneity. Measures of reliability reported. Most instruments used were pre-existing and already tested for validity. Measures of reliability reported. Most instruments used were pre-existing and already tested for validity. Response rates not calculated. Pairwise deletion used to deal with missing values.

	Clear RQs?	Data collected answers RQs?	Appropriate sampling strategy?	Sample representative?	Appropriate measurements?	Risk of non-response bias low?	Statistical tests appropriate?	Comments
Allen et al. (2017)	Yes	Yes	Yes	Can't tell	Somewhat	Yes	Yes	Probability sampling: all members of the university cohort responded to the survey. Sample characteristics not adequately described; difficult to say if the sample is representative of the broader population. Variables are clearly defined, but no test of instrument validity. Only reliability measures are reported. Self-reports are appropriate since the variables under study pertain to subjectively experienced mental states. All cohort members responded at both waves of data collection.

	Clear RQs?	Data collected answers RQs?	Appropriate sampling strategy?	Sample representative?	Appropriate measurements?	Risk of non-response bias low?	Statistical tests appropriate?	Comments
Carson et al. (2017)	Yes	Yes	Can't tell	No	Somewhat	Can't tell	Yes	No details regarding the sampling procedure, but most likely used non-probability sampling. Sample characteristics described and sample seems too homogeneous, even when RQ does not specifically pertain to the demographic represented by the sample. No attempt to stratify the sample according to population characteristics. Variables are clearly defined, but the questionnaires used were not tested for reliability or validity. Response rates not reported. No information regarding missing values. Potential for response bias cannot be ruled out.
Curran et al. (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Probability sampling (nationwide dataset used). Schools and Staffing Survey data is nationally representative. Variables are clearly defined. Schools and Staffing Survey already tested for validity and reliability. Listwise deletion resulted in only 15% data loss. Large sample size means listwise deletion should not substantively diminish statistical power.

	Clear RQs?	Data collected answers RQs?	Appropriate sampling strategy?	Sample representative?	Appropriate measurements?	Risk of non-response bias low?	Statistical tests appropriate?	Comments
Del Rosario et al. (2018)	Yes	Yes	Somewhat	Can't tell	Yes	Yes	Yes	Purposive (i.e., non-probability sampling). Researchers mentioned that findings should be viewed in the context of the participants, yet RQs are stated as seeking answers that generalise to a broader population. No description of sample characteristics. Researchers claim that sampling is purposive; thus, they did not attempt to stratify the sample. Variables are clearly defined. Existing scales used. Reliability tested and reported. Self-reports appropriate since outcomes pertain to subjectively experienced mental states. 100% response rate for all questions except one.
Doyle et al. (2019)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Non-probability sampling: data from teachers who attended at least one day of the intervention was used. Sample characteristics described; good level of heterogeneity. Baseline characteristics reportedly similar as those of broader population. Variables are clearly defined. Inter-rater reliability reported. 80% of sampled teachers completed a follow-up assessment.

	Clear RQs?	Data collected answers RQs?	Appropriate sampling strategy?	Sample representative?	Appropriate measurements?	Risk of non-response bias low?	Statistical tests appropriate?	Comments
Duke et al. (2020)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Non-probability sampling: sample comprised of professors who voluntarily completed the survey. Sample characteristics described; good level of heterogeneity. Variables are clearly defined. Existing surveys used, which have already been pre-tested for validity and reliability. Surveys piloted before administration. Self-reports appropriate since outcome pertains to subjectively experienced mental state. All participants completed the survey. This accounts for 73% of the faculty's assistant professor population. No missing values reported.
Easterly & Myers (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Probability sampling: census sampling frame determined by state agricultural education coordinators. Sample is random and stratified. Sample baseline characteristics comparable to population baseline characteristics. Variables are clearly defined. Surveys piloted before administration. Reliability measures reported. Self-reports appropriate since outcomes pertain to subjectively experienced mental states. 72.5% usable response rate.

	Clear RQs?	Data collected answers RQs?	Appropriate sampling strategy?	Sample representative?	Appropriate measurements?	Risk of non-response bias low?	Statistical tests appropriate?	Comments
Ganotice et al. (2016)	Yes	Yes	Can't tell	Yes	Yes	Can't tell	Yes	No details regarding the sampling procedure, but most likely used non-probability sampling. Sample characteristics described; good level of heterogeneity. Variables are clearly defined. Pre-existing surveys used. Reliability measures reported. Self-reports appropriate since predictor variables pertain to subjectively experienced mental states. Response rates not reported. No information regarding missing values. Potential for response bias cannot be ruled out.
Gloria et al. (2013)	Yes	Yes	Yes	Yes	Yes	Some what	Yes	Non-probability sampling: teachers initially identified from roster of Teaching Excellence Award recipients, followed by snowballing. Sample characteristics described; good level of heterogeneity. Variables are clearly defined. Surveys used are modified versions of pre-existing instruments. Reliability and validity measures reported. Self-reports appropriate since predictors and outcomes pertain to subjectively experienced mental states. Moderate response rate (26%). No information on missing values.

	Clear RQs?	Data collected answers RQs?	Appropriate sampling strategy?	Sample representative?	Appropriate measurements?	Risk of non-response bias low?	Statistical tests appropriate?	Comments
Johnson et al. (2018)	Yes	Yes	Can't tell	Can't tell	Yes	Yes	Yes	No details regarding the sampling procedure, but most likely used non-probability sampling. No description of sample characteristics, except for role in the organisation. Variables are clearly defined. Used pre-existing survey that has been pre-tested for validity and reliability. Reliability and validity measures reported. Self-reports appropriate since outcomes and predictors are subjectively experienced mental states. Only 42 responses contained missing data, indicating a high response rate. Missing values eliminated listwise.

	Clear RQs?	Data collected answers RQs?	Appropriate sampling strategy?	Sample representative?	Appropriate measurements?	Risk of non-response bias low?	Statistical tests appropriate?	Comments
Khan et al. (2020)	Yes	Yes	Yes	Yes	Somewhat	Some what	Yes	Non-probability sampling: teachers participated by accessing a link sent through their respective universities. Sample characteristics described; good level of heterogeneity. Variables are clearly defined. Used pre-existing survey that has been pre-tested for validity and reliability. Reliability and validity measures reported. Self-reports are only partially appropriate since predictors and outcomes are not entirely subjectively experienced. Moderate attrition (67.2% of T1 participants completed follow-up at T2). Tested and showed that attrition did not cause selection bias.

	Clear RQs?	Data collected answers RQs?	Appropriate sampling strategy?	Sample representative?	Appropriate measurements?	Risk of non-response bias low?	Statistical tests appropriate?	Comments
Reeder (2020)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Non-probability sampling: teachers participated by accessing a link sent through their respective universities. Sample characteristics described; good level of heterogeneity. Variables are clearly defined. Existing surveys used, which have already been pre-tested for validity and reliability. Reliability and validity measures not reported for all scales used. Self-reports only partly appropriate since predictors are not entirely subjectively experienced. Missing data eliminated through pairwise deletion.

	Clear RQs?	Data collected answers RQs?	Appropriate sampling strategy?	Sample representative?	Appropriate measurements?	Risk of non-response bias low?	Statistical tests appropriate?	Comments
Richards et al. (2016)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Non-probability sampling: teachers participated by accessing a link sent through their respective schools. Sample and population characteristics described; sample only slightly deviates from population characteristics. Variables are clearly defined. Used existing surveys, which have been pre-tested for validity and reliability. Reliability measures reported. Self-reports appropriate since predictors and outcomes are subjectively experienced mental states. 4% of responses received were unusable; eliminated through listwise deletion.

	Clear RQs?	Data collected answers RQs?	Appropriate sampling strategy?	Sample representative?	Appropriate measurements?	Risk of non-response bias low?	Statistical tests appropriate?	Comments
Richards et al. (2019)	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Non-probability sampling: teachers participated by accessing a link sent through their respective schools. Sample characteristics described; good level of heterogeneity. Surveys piloted with 25 teachers prior to actual implementation. Reliability and validity measures reported. Self-reports appropriate since predictors and outcomes are subjectively experienced mental states. Surveys piloted with 25 teachers prior to actual implementation. Reliability and validity measures reported. Self-reports appropriate since predictors and outcomes are subjectively experienced mental states. Response rates not reported. No information regarding missing values. Potential for non-response bias cannot be ruled out.

	Clear RQs?	Data collected answers RQs?	Appropriate sampling strategy?	Sample representative?	Appropriate measurements?	Risk of non-response bias low?	Statistical tests appropriate?	Comments
Robertson-Kraft & Duckworth (2014)	Yes	Yes	Yes	Some what	Yes	Yes	Yes	Probability sampling: teachers included in the sample were selected based on pre-established parameters. Stratified random sampling. However, all participants were alternatively certified - conclusions cannot be extended without reservations to broader teacher population. Third-party rating instrument was tested for reliability. Reliability measures reported. Résumés used in third-party rating were already screened for eligibility. No missing values reported.
Steuber et al. (2019)	Yes	Yes	Yes	Yes	Yes	Some what	Yes	Non-probability sampling: teachers participated by accessing a link sent through their respective universities. Sample characteristics described; good level of heterogeneity. Baseline characteristics reportedly similar between two institutions. Existing survey used. Reliability tested and reported. Trait-level grit as self-report is appropriate since study examines how it predicts work behaviour. 38% response rate. No information regarding missing values.

	Clear RQs?	Data collected answers RQs?	Appropriate sampling strategy?	Sample representative?	Appropriate measurements?	Risk of non-response bias low?	Statistical tests appropriate?	Comments
Wilson et al. (2020)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Non-probability sampling: teachers volunteered to participate in the study. Sample characteristics described; good level of heterogeneity. Existing surveys used, which have been pre-tested for validity and reliability. Validity and reliability measures reported. 39.33% response rate; final sample is equal to 37.88% of the targeted respondents.

Appendix H: Appraisal – qualitative studies

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Beck et al. (2020)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through analyst triangulation and member-checking. Cross-case analysis used. Researchers do not consider their positionality.
Belknap & Tymans (2015)	Yes	Yes	Yes	Yes	Somewhat	Somewhat	Yes	Documented changes in codes and used peer feedback. Validation through member-checking. Used both inductive and deductive coding. Paper could benefit from more illustrative quotes. Researchers do not consider their positionality.
Benjamin & Black (2012)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through member-checking. Open, axial, and selective coding used. Researchers do not consider their positionality.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Bryan & Bowder (2013)	Yes	Yes	Yes	Yes	No	Yes	Somewhat	Coding approach unclear. Unclear if participant validated resulting analyses. Researchers do not consider their positionality.
Carlson (2019)	No							Research question is not clearly stated. Therefore, it was not taken forward for further appraisal.
Castro et al. (2010)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through analyst triangulation. Used both inductive and deductive coding. Researchers do not consider their positionality.
Chan & Dennis (2019)	Yes	Yes	Yes	Somewhat	Yes	Yes	Yes	Validation through analyst triangulation. Used both inductive and deductive coding. Interviews might have been more appropriate for a fuller conceptualisation of resilience.
Damico et al. (2018)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Credibility strengthened through audit trail. Validation through member-checking. Inductive coding used.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Day & Hong (2016)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through analyst triangulation and member-checking. Inductive coding used. Researchers do not consider their positionality.
Dollarhide et al. (2018)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Validation through analyst triangulation and member-checking. Inductive coding used.
Doney (2013)	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat	Multiple methods used to establish credibility. No validation methods discussed. Cross-case analysis used. Researcher does not consider their positionality.
Douglass (2014)	Yes	Some what						Unclear why PD providers were interviewed instead of participants themselves, when the study aims to describe participant experiences of the PD. Therefore, it was not taken forward for further appraisal.
Drew & Sosnowski (2019)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through member-checking. Open, axial, and selective coding used. Researchers do not consider their positionality.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Dvorakova (2018)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Validation through member-checking. Exploratory approach used (minimal theoretical a priori).
Ellison & Mays-Woods (2019a)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Use of multiple methods and team coding strengthened credibility. Validation through member-checking. Researchers do not consider their positionality.
Ellison & Mays-Woods (2019b)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Used peer feedback to strengthen credibility of analyses. Validation through member-checking. Used both inductive and deductive coding. Researchers do not consider their positionality.
Fulton et al. (2020)	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat	No discussion of data validation procedures. Used both inductive and deductive coding. Researchers do not consider their positionality.
Garcia & Gomez (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Somewhat	No discussion of data validation procedures. Field notes and interview transcripts inductively coded to determine themes.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Gonzales & Terosky (2019)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Used peer feedback to strengthen credibility of analyses. Validation through member-checking. Narrative analysis used, informed by intersectionality and critical theory.
V. Griffiths (2011)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through member-checking and analyst triangulation. Unclear how four out of nine participants were selected as illustrative case studies.
A. Griffiths (2014)	No							Research question is not clearly stated. Therefore, it was not taken for further appraisal
Gu (2014)	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat	No discussion of data validation procedures. Grounded theory and cross-case analysis used. Researcher does not consider their positionality.
Gu & Day (2013)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through member-checking. Cross-case analysis of narrative portraits used. Researchers do not consider their positionality.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Henderson et al. (2018)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Used inter-rater reliability check. Validation through analyst triangulation and member-checking. Researchers do not consider their positionality.
Hirsch (2018)	Yes	Yes	Yes	Somewhat	No	Yes	No	Validation through member-checking. Analytical approach is unclear. Unclear if participant accounts were transcribed. Unclear how themes were identified. No description of the coding approach. Also unclear how data from artefacts, observations, and interviews were integrated.
Hong (2012)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through member-checking. Grounded theory used. Researcher does not consider their positionality.
Horton-Deutsch et al. (2010)	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat	Hermeneutic analysis used, but coding approach unclear (inductive? deductive? both?). Researchers do not consider their positionality. Used peer feedback, but no discussion of other validation procedures.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Hughes (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Provided step-by-step study documentation. Validation through member-checking. Used both inductive and deductive coding.
Huisman et al. (2010)	Yes	Yes	Yes	Yes	No	Yes	Somewhat	Unclear coding approach. Validation through analyst triangulation. Researchers do not consider their positionality.
Kadi-Hanifi & Keenan (2016)	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat	Validation through member-checking. Life history approach used. Narrative analysis as analytical method, but the step-by-step process is unclear.
Kelly et al. (2015)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through member-checking and inter-rater reliability check. Researchers do not consider their positionality.
Kirk & Wall (2010)	Yes	Yes	Yes	Somewhat	No	Yes	No	Analytical approach is unclear. No discussion of data validation procedures. Life history approach used. Unclear how themes were identified. Unclear if participant accounts were transcribed. Researchers do not consider their positionality.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Luthar & Mendes (2020)	Yes	Yes	Yes	Somewhat	No	Somewhat	No	Analytical approach is unclear. Responses to a prompt published online via social media served as the data source. Unsure if data gathered through one prompt can sufficiently account for challenges faced by teachers in trauma-informed schools. no discussion of how findings were extracted. Paper could benefit from more illustrative quotes. Researchers do not consider their positionality. Researchers suggest more systematic analytical research in the future, following their exploratory study. No discussion of data validation procedures.
Mackenzie (2012)	Yes	Yes	Yes	Yes	Yes	Yes	Somewhat	Grounded theory and life history approach used. No discussion of data validation procedures.
Maring & Koblinsky (2013)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through analyst triangulation and member-checking. Used both inductive and deductive coding. Researchers do not consider their positionality.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Martinez et al. (2017)	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat	Validation through transcript review and peer debriefing. Typological analysis, informed by critical race theory, was used. However, the coding approach is unclear: was it inductive? deductive? both?
McIntyre (2010)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through transcript review. Inductive coding used. Researcher does not consider their positionality.
Meister & Ahrens (2011)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through member-checking and peer debriefing. Used open, axial, and selective coding. Researchers do not consider their positionality.
Mintrop & Charles (2017)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Validation through member-checking. Clear step-by-step description of the analytical process. Interaction and narrative analysis used.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Morettini et al. (2020)	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat	Used inter-rater reliability check. Open and axial coding used, informed by a sociocultural framework. However, it is unclear how the sociocultural framework was used to develop themes; researchers indicated that it informed development of the interview protocol, but do not say how it informed the analysis. Researchers do not consider their positionality.
Morrell-Scott (2017)	Yes	Yes	Yes	Yes	No	Yes	Somewhat	Unclear coding approach makes it difficult to determine alignment between analysis and interpretation. Researcher does not consider their positionality. Validation through member-checking and peer-checking.
Mrstik et al. (2019)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through member-checking and inter-rater reliability check. Researchers do not consider their positionality.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Nehmeh & Kelly (2018)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through analyst triangulation and member-checking. Cross-case analysis and open coding used. Researchers do not consider their positionality.
Newberry & Allsop (2017)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through analyst triangulation. Used both inductive and deductive coding. Cross-case analysis used. Researchers do not consider their positionality.
Norton & Griffith (2020)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through analyst triangulation and member-checking. Inductive coding used. Researchers do not consider their positionality.
O'Keeffe (2015)	No							Research question is not clearly stated. Therefore, it was not taken forward for further appraisal.
O'Sullivan & Goodwyn (2020)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Established inter-coder reliability. Grounded theory and cross-case analysis used. Researchers do not consider their positionality.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Olson & Roberts (2020)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Validation through transcript review, member-checking, and analyst triangulation. Inductive coding used.
Pizzarro & Kohli (2020)	Yes	Yes	Yes	Yes	Yes	Somewhat	Somewhat	Validation through member-checking. Axial and open coding, informed by critical race theory, were used. Only three narratives were presented, because the researchers claim they best represent the themes extracted. Without illustrative excerpts from the broader dataset that substantiate the themes provided, this claim cannot be verified.
Polidore et al. (2010)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Validation through member-checking. Used both inductive and deductive approaches. Historical biography method used.
Post et al. (2020)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Validation through analyst triangulation and member-checking. Used inductive coding.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Prather-Jones (2011)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through member-checking. Took a life history approach. Used both inductive and deductive coding. Researcher is upfront about relationship with participant but does not consider their positionality.
Rabin & Smith (2012)	No							Research question is not clearly stated. Therefore, it was not taken forward for further appraisal.
Richards et al. (2018)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Negative case analysis used to analyse conflicting participant accounts. Credibility strengthened through peer debriefing. Validation through analyst triangulation and member-checking. Researchers do not consider their positionality.
Santoro, D.A. (2011)	No							Research question is not clearly stated. Therefore, it was not taken forward for further appraisal.
Santoro, C. (2017)	No							Research question is not clearly stated. Therefore, it was not taken forward for further appraisal.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Schussler et al. (2016)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through analyst triangulation and data triangulation. Axial coding used. Researchers do not consider their positionality.
Schussler et al. (2018)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through analyst triangulation. Inter-coder reliability established. Used both inductive and deductive coding approaches. Researchers do not consider their positionality.
Schussler et al. (2019)	Yes	Yes	Yes	Somewhat	Somewhat	Yes	Yes	Validation through analyst triangulation. Attempts at reducing bias through coder 'blinding'. Content of responses gives a good initial view, but observed behaviour would be a better indicator of the adoption of mindful practices. Used both inductive and deductive coding approaches. Researchers do not consider their positionality.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Schussler et al. (2020)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through analyst triangulation. Used both inductive and deductive coding approaches. Researchers do not consider their positionality.
Sharp & Jennings (2016)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through negative case analysis, peer debriefing, and theoretical triangulation. Used inductive coding approach. Researchers do not consider their positionality.
Sossick et al. (2019)	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat	Unclear coding approach (deductive? Inductive? both?). Attempts to reduce social desirability bias by having participants interview with someone other than their assigned coach. No validation procedures discussed.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Susman-Stillman et al. (2020)	Yes	Yes	Yes	Somewhat	Somewhat	Yes	Somewhat	Validation through analyst triangulation. Inductive coding used. Researchers do not consider their positionality. Interviews might have been more appropriate for a fuller understanding of supervisors' perspectives. Survey does not allow for clarification.
Taylor (2013)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Validation through member-checking and peer debriefing. Cross-case analysis and inductive approach used.
Taylor & Newberry (2018)	Yes	No						The study attempts to derive broader theory on a widespread phenomenon (emotional regulation in teachers) based only the researcher's personal reflections. Since the data collected does not answer the research question, the study was not taken forward for further appraisal.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Thorburn (2011)	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat	Validation through member-checking. Unclear analytical approach: was the analysis informed by a broader overarching theory or was it inductively developed? A step-by-step description of the analytical procedure would have been helpful.
Tricarico et al. (2015)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Transcripts co-coded with participants. Inductive analytical approach used. Researchers are upfront about their relationship with participants but do not consider their positionality.
Turner (2015)	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat	No discussion of data validation procedures. Cross-case analysis used. Researcher does not consider their positionality.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Werhan (2010)	Yes	Yes	Yes	Yes	No	Somewhat	No	Analytical approach is unclear. Researcher does not consider their positionality. No discussion of data validation procedures. The paper could have benefitted from more illustrative quotes.
Whitfield (2019)	Yes	Yes	Yes	Can't tell	No	Yes	No	No discussion of data validation procedures. No information provided regarding questionnaire used for data collection. Analytical approach is unclear. Unclear how multiple cases were analysed. Coding approach unclear. Difficult to judge if approach is appropriate to research question. Researcher does not discuss their positionality.
Wilcox & Lawson (2018)	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat	No discussion of data validation procedures. Used both inductive and deductive coding approaches. Researchers do not discuss their positionality.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Wilcoxen et al. (2020)	Yes	Yes	Some what	Somewhat	Somewhat	Somewhat	Somewhat	Validation through peer debriefing and analyst triangulation. Used inductive coding approaches. No explanation regarding why the 341 responses selected for thematic analysis were chosen out of the total 438 survey respondents. Counts of responses per theme were provided. The paper could have benefitted from the use of illustrative quotes. Interviews might have been more appropriate for a richer understanding of teachers' experiences. Researchers do not consider their positionality.
Wilkins & Comber (2015)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Validation through analyst triangulation and member-checking. Critical incident technique used. Inductive and deductive approaches both used in coding. Researchers do not consider their positionality.

	Clear RQs?	Data collected answers RQs?	Qualitative method appropriate?	Qualitative data collection methods adequate to address RQs?	Findings adequately derived from data?	Interpretation substantiated by data?	Coherence between data sources, collection, analysis, and interpretation?	Comments
Woods & Lynn (2014)	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	Credibility strengthened through audit trail. Validation through member-checking and analyst triangulation. Inductive approach used. Researchers do not consider their positionality.
Wright (2018)	Yes	No	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	The study attempts to make broader institutional and structural claims while depending on unsystematically collected anecdotal accounts by the author. Since the data does not adequately answer the research question, this study was not taken forward for further appraisal.
Yonezawa et al. (2011)	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat	Unclear analytical approach. Established inter-coder reliability.