

Teachers' Personal Resources: What Do We Know and Where Do We Go? A Scoping Review Through the Lens of Job Demands-Resources Theory

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Abstract

Teacher attrition and continue to be the source of considerable concern among educators and school systems alike. Thus, supporting teachers to remain in the profession is of tremendous importance. Against the backdrop of this work, personal resources – as a component of the broader Job Demands-Resources framework– have emerged as potentially salient determinants of teachers' individual and work-related wellbeing outcomes. Despite the growth in research attending to personal resources, particularly in teaching populations, there is an absence of research that systematically examines the personal resources which may be associated with teachers' wellbeing. Accordingly, the aim of the present research was to conduct a scoping review of the personal resources which have been associated with teachers' wellbeing-related outcomes to identify gaps in the present literature which may provide direction for future research. The search identified 17 studies of relevance. In total, 11 personal resources were examined in relation to 22 different outcomes. Analyses highlighted the comparative popularity of self-efficacy as a personal resource and the distinction between resources of an affective-cognitive and behavioral-practical nature. The results of the review highlighted the need for further clarity in terms of the classification of personal resources, the need to conduct research among non-western populations and among teachers at different school levels, and the need for a broader range of methodologies to further nuance understandings. Taken together, the results of this review have implications for future research examining teachers' personal resources and JD-R theory more broadly, as well as interventions which may cultivate such resources.

Keywords: teacher wellbeing; personal resources; job demands-resources; teacher retention

Introduction

Teachers play a fundamental role in the development of the academic, social, and emotional capacity of students (Collie et al., 2012) – and more broadly, a functional and equitable society (Heffernan et al., 2019). However, teacher attrition and retention-particularly in the primary and secondary education sectors (Carroll et al., 2022) – continue to be the source of considerable concern among educators and school systems alike (Collie & Mansfield, 2022; Saloviita & Pakarinen, 2021). Thus, supporting teachers to remain in the profession is of tremendous

importance. Accordingly, the past two decades have seen the proliferation of research attending to the factors associated with teacher wellbeing (Carroll et al., 2022; Collie et al., 2018). Indeed, a plethora of studies have considered the personal, organizational, and structural factors associated with the wellbeing of primary and secondary school teachers.

Against the backdrop of this work, a useful theoretical framework which has emerged for conceptualising, predicting, and understanding teachers' wellbeing is the Job Demands-Resources model. Key to the theory is the

proposition that employee outcomes can be understood, explained, and predicted by examining two organizational aspects of work and the workplace: demands and resources (Hakanen et al., 2008). In addition to job demands and job resources, recent work into JD-R theory has also acknowledged the role that personal resources play in predicting individual- and work-related outcomes. Personal resources broadly refer to self-evaluations linked to an individual's resilience, and sense of their ability to control and impact their environment (Hobfoll et al., 2003). Personal resources are of particular interest as these tend to be malleable factors over which teachers may exercise some degree of control; that is, they may be strengthened or fostered through interventions (van Wingerden et al., 2017). Indeed, recent research conducted by Bakker and van Wingerden (2021) suggests that interventions targeting employees' personal resources can positively influence their work engagement, which in turn fosters a 'gain spiral' whereby employees' engagement reciprocally and positively reinforces their sense of self-efficacy and resilience. Accordingly, the cultivation of teachers' personal resources may be an important avenue for potential interventions addressing teacher wellbeing,

Despite the growth in research attending to personal resources, particularly in teaching populations (e.g., Collie et al., 2018; Mérida-López et al., 2022), there is an absence of research that systematically examines the personal resources which may be associated with teachers' wellbeing. Given that such factors may be pivotal in enhancing various dimensions of wellbeing (Bakker & van Wingerden, 2021) there is a need to conduct a scoping review of prior work examining such capacities in teachers. Scoping reviews are particularly useful for examining phenomena in emerging research fields, as they can provide clarity on key concepts in the area, identify types of available evidence, and aid in identifying knowledge gaps (Munn et al., 2018). Accordingly, the aim of the present research was to conduct a scoping review of the personal resources which have been associated with teachers' wellbeing, in order to establish an agenda for the development of interventions and

to identify gaps in the present literature which may provide direction for future research.

Background

Theoretical Framework

The present review draws on the Job Demands-Resources (JD-R) model (Demerouti et al., 2001) of wellbeing, which has emerged as a particularly useful theory and framework through which teachers' wellbeing can be understood. Central to the theory is the notion that the working conditions within all occupations can be broadly defined as either job demands or job resources (Demerouti et al. 2001). Job demands are aspects of work requiring protracted physical and/or psychological effort, resulting in the depletion of energy, and considerable physical and/or psychological costs (e.g., work overload, student misbehavior; Demerouti et al., 2001; Schaufeli & Taris, 2014). Comparatively, job resources enable employees to achieve work goals, manage job demands, and facilitate personal growth and development (Demerouti et al., 2001; Hakanen et al., 2008). These resources may be social, physical, psychological, or organizational in nature; e.g., autonomy support from school leadership, assistance from colleagues, and supervisory support (Collie & Martin, 2017; Skaalvik & Skaalvik, 2017). As described above, the theory also acknowledges the fundamental role of personal resources, which like job resources, assist employees to achieve work goals and facilitate personal growth. Examples include adaptability, self-efficacy, and cognitive reappraisal (Collie et al., 2018; Dicke et al., 2018; Yin et al., 2018).

These demands and resources evince two independent psychological processes: the health impairment process - in which job demands uniquely predict burnout -, and the motivational process - in which job resources are inherently motivational and lead to higher work engagement and wellbeing (Bakker & Demerouti, 2017). The present review was concerned with the types of personal resources implicated in these processes, and the range of outcomes with which such resources were associated.

Personal Resources

As described above, personal resources are generally related to an individual's sense of resilience and ability to control their environment (Xanthopoulou et al., 2007). These resources have motivational potential, and are thus associated with positive individual and occupational outcomes, such as increased engagement, enhanced task performance, and greater job satisfaction (Bakker & Demerouti, 2017). Personal resources satisfy employees' basic psychological needs for autonomy, competence, and relatedness and thus promote optimal functioning (Bakker & Demerouti, 2017).

Since their inclusion in JD-R theory in 2007 (Xanthopoulou et al., 2007), a range of personal resources have been examined among employees in various occupations. For instance, personal resources such as hope, resilience, self-efficacy, organizational-based self-esteem, adaptability, and optimism have been examined among samples of educators, engineers, occupational chemists, and public service employees (Bakker & van Wingerden, 2021; Collie et al., 2018; Tadic et al., 2015; Xanthopoulou et al., 2009). However, to date, there have been few—if any—attempts to unite this work to identify broader patterns or gaps in the literature.

A further gap in the literature relates to the categorisation of personal resources. In their initial examination of personal resources, Xanthopoulou et al. (2007) noted that such resources may operate at either an affective-cognitive level or at a behavioral-practical level. In turn, this categorisation may influence the extent to which a specific personal resource is effective in managing specific job demands and the prevention of exhaustion. It may be that more practical personal resources—such as time management or self-organization—may operate differently to affective-cognitive resources, such as self-efficacy or optimism. Although some emerging work suggests that matching the nature of resources and demands is important (e.g., de Jonge & Huter, 2021), very limited work appears to have considered this in relation to personal resources specifically, nor among teaching populations.

In terms of their role in the broader JD-R framework, personal resources have been incorporated into JD-R theory in a number of ways; for instance, as a mediator of the relations between job characteristics and outcomes (Huang et al., 2016), as a moderator of the association between job characteristics and outcomes (e.g., Van den Broeck et al., 2011), and as a factor influencing individuals' perceptions of the work environment (e.g., Xanthopoulou et al., 2009). However, the vast majority of studies have tended to consider personal resources as antecedents to strain and motivation. These studies have largely drawn on the theory proposed by Judge et al. (1997), which suggests that personal resources influence the way individuals understand and react to their environments. Accordingly, personal resources have been largely positioned alongside job resources and job demands as antecedents to well-being and retention-related outcomes. Given that the focus of the present review is to identify the personal resources that may be cultivated to foster teacher wellbeing, this review sought to identify studies in which these resources were positioned as antecedents to measures of teachers' wellbeing. In turn, the wellbeing outcomes with which these personal resources were associated with were of central interest.

Conceptualisations of Teacher Wellbeing

Like personal resources, wellbeing has been widely defined in research harnessing JD-R theory, and the occupational literature more broadly (Fisher, 2014). Accordingly, the present review was broadly guided by the conceptualisation of wellbeing articulated within Job Demands-Resources theory (Bakker & Demerouti, 2017), which suggests that wellbeing comprises both positive and negative dimensions or outcomes. For instance, negative dimensions of wellbeing may include burnout, disengagement, turnover intentions, ill health, job-related anxiety, or dissatisfaction (Bakker & Demerouti, 2007; Collie et al., 2018; Scanlan & Still, 2019). Conversely, positive dimensions of wellbeing may include organizational commitment, occupational commitment, job satisfaction, engagement, and life satisfaction (Dicke et al., 2018; Upadaya & Salmela-Aro, 2020). Given the varied dimensions

of wellbeing that fall underneath this definition, a scoping review was appropriate to provide further clarity on how wellbeing has been defined in relation to personal resources and teachers in primary and secondary schools.

Scoping Review

Scoping reviews have emerged as an approach to providing an overview of the existing evidence in a field and to provide directions for future research (Munn et al., 2018). Such approaches aim to identify the nature and extent of research in comparatively understudied fields and may be a precursor to later systematic reviews (Grant & Booth, 2009). Given the wide range of definitions of both personal resources and wellbeing, a scoping review was an appropriate methodology to provide clarity on key concepts and definitions within the field. A further aim of adopting this approach was to clarify existing understandings of personal resources and wellbeing outcomes to establish a foundation for a larger systematic review, which may consider the strength of the associations between these factors as a precursor to relevant interventions.

Aims of the Present Study

The overarching aim of the present research was thus to perform a scoping review of the extant literature to identify the personal resources that have been examined among teaching samples and to identify the dimensions of teacher wellbeing with which such resources have been associated. Based on the Population/Concept/Context framework proposed as best practice for developing research aims in scoping reviews (Joanna Briggs Institute; JBI, 2022), the following research aims were developed:

- 1) Identify and describe the personal resources that have been examined among samples of teachers within the context of JD-R theory;
- 2) Identify and describe the outcome variables these personal resources have been examined in relation to.

Methods

The present investigation was guided by the approach to scoping reviews proposed by Tricco et al. (2018), which details a checklist of items for ensuring the methodological and reporting quality is consistent with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Employing a rigorous design using these guidelines was vital for ensuring the transparency and reproducibility of the findings (Tricco et al., 2016). Accordingly, the following steps were undertaken.

Search Protocol and Selection Criteria

Initial analyses of 'Figshare', JBI, and the Open Science Framework did not reveal the existence of review protocols in this area. Accordingly, the following protocol was developed. In the first phase, eligibility criteria for selection and inclusion of the relevant studies were developed. All studies had to examine at least one personal resource using the Job Demands-Resources framework. Given that personal resources were first introduced and understood conceptually within the JD-R framework in 2007 (Xanthopoulou et al., 2007), only studies including or after this year were considered. Further, as teacher attrition and retention are problems which have been particularly highlighted among primary and secondary school teachers (Carroll et al., 2022; Tikkanen et al., 2022), only studies which included primary and secondary school teachers as a sample were selected. Studies had to be peer-reviewed to ensure a basic level of conceptual and methodological quality (Koshy et al., 2018) and had to be empirical, rather than theoretical in nature. As research relating to teachers' personal resources is still in its infancy, no minimum sample size requirement was imposed. As described above, as the focus of the present study was on those personal resources which may form the basis of interventions, only studies which positioned personal resources as predictors of wellbeing-related outcomes were included, rather than those which positioned personal resources as an outcome or mediator. A summary of the inclusion criteria is shown in Table 1:

Table 1*Inclusion and Exclusion Criteria*

Criterion	Included	Excluded
Databases	ERIC, Psycinfo, Google Scholar, Proquest theses	Other databases
Time frame	2007-2022	Articles published before January 1 2007
Publication type	Peer-reviewed journal articles	Books and book chapters, review articles, articles that were not peer-reviewed
Sample	Primary/Elementary and Secondary School teachers	Early childhood teachers, University Academics, Special Education teachers
Conceptual Positioning	Studies which included personal resources as predictors of wellbeing outcomes	Studies which positioned personal resources as outcomes of teachers' characteristics, demands, or job resources, or as a mediator of an association

Search Approach

Following recommendations for conducting scoping reviews detailed by Peters et al. (2021), the search began by consulting two large databases: PsycInfo-which is an electronic database developed by the American Psychological Association, specialising in the fields of behavioral and social science- and ERIC (Education Resources Information Centre)- which is an online library of education research sponsored by the Institute of Education Sciences in the United States. Both databases are among the largest in their respective fields. The following keywords and search terms used are presented below:

1. teacher AND (personal resource)
2. teacher AND (personal resource) AND (job demands resources) OR (JD-R)
3. teachers AND (personal resources) AND (job demands job resources) OR (JD-R)

The search of the ERIC database yielded 98 results, while the search of PsycInfo revealed 44 results. After removing duplicates, 139 records remained. The database search was augmented with the use of Google Scholar. Due to the voluminous search results and time constraints, only the first 200 results were screened. This screening revealed nine additional peer-reviewed

journal articles which met the search criteria. In addition to these sources, a search was conducted of the “grey literature” (i.e., relevant reports and dissertations) using both Google Scholar and Proquest theses. Four records of relevance were obtained from this search.

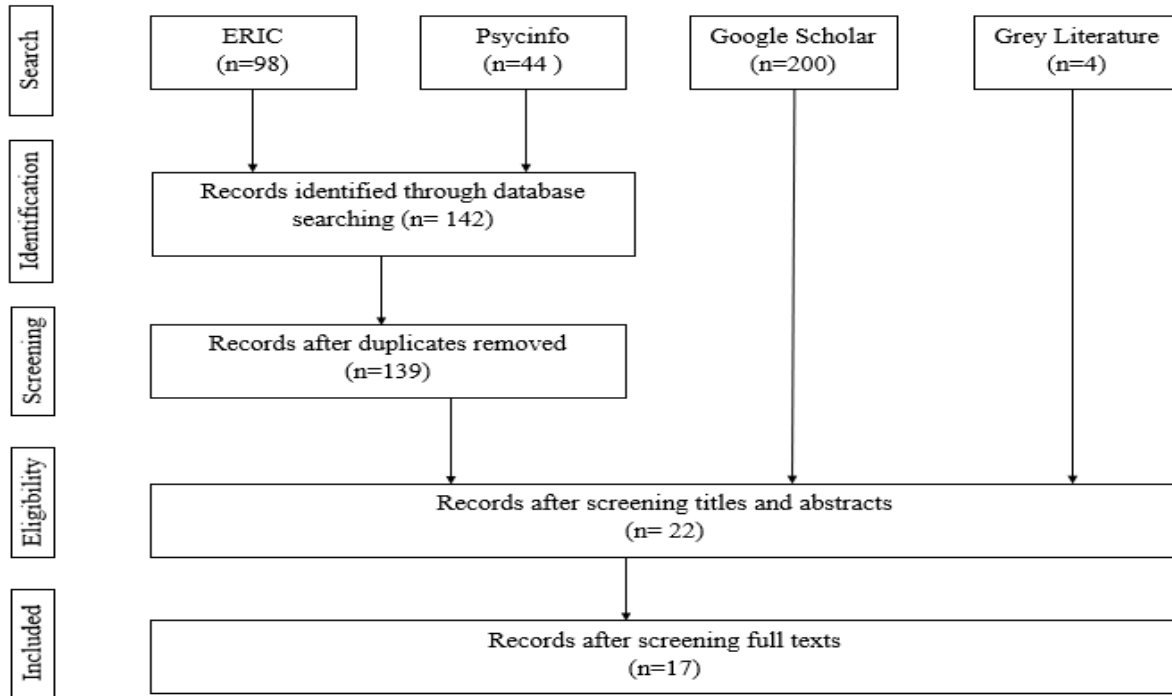
Although a 2-step process of screening abstracts is generally recommended for larger systematic reviews, this process may not be necessary when conducting smaller scoping reviews given how labour-intensive this approach is (Waffenschmidt et al., 2019). Waffenschmidt et al. (2019) suggest that single screening of studies may still represent an appropriate methodological strategy when the researcher has a high level of knowledge in the field. The author of the present study has worked extensively with the theoretical framework (Job Demands-Resources theory), and has published extensively in the field. Accordingly, the author screened the remaining 152 titles and abstracts to determine eligibility for the study. The vast majority of studies were excluded because they examined a population other than primary or secondary school teachers (e.g., university faculty, principals, or early childhood teachers), they did not examine specific personal resources, or they did not use Job Demands-Resources theory to frame the study.

Examination of the titles and abstracts revealed 22 records of relevance. The full texts of these records were then screened for final inclusion, yielding 17 final results. Seven studies were excluded as they positioned personal resources as mediators or outcomes, because they included

early childhood or university teachers, or because the full text was not in English. Figure 1 depicts the study selection process.

Figure 1

Study Selection Flowchart



Analysis

A table summarising the key features of the studies was created to document the central aspects relevant to the research question. This table included the author, sample and size,

methodology used, person resources examined, and the outcome with which the personal resource was examined in relation. This is shown in Table 2.

Table 2

Study Summaries

Ye ar	Study Author	Sample size	and School level	Method	Personal Resource/s examined	Outcome examined	Publica tion Type	
2022	Granziera, 2022	486 school teachers	Primary	Primary	Structural Equation Modeling,	Self-efficacy, adaptability	Emotional exhaustion, behavioral	Thesis

				Latent Profile Analysis		engagement, organizational commitment, turnover intentions	
2021	Collie, Martin, Morin, Malmberg, & Sammons, 2021.	5,439 teachers working in 364 schools in Australia and 2,216 teachers working in 149 schools in England	Lower and upper secondary	Multilevel latent profile analysis	Self-efficacy	Job satisfaction and occupational commitment	Journal Article
2021	Collie, 2021.	325 Australian teachers	Primary and secondary	Structural equation modeling	Buoyancy	Somatic burden, stress, emotional exhaustion	Journal Article
2021	Roethler, 2021.	349 Midwestern K-12 teachers (US)	K-12	Hierarchical regression	Psychological capital	Burnout, engagement	Thesis
2020	Collie, Malmberg, Martin, Sammons & Morin, 2020.	6,411 teachers from 369 schools in Australia and 2,400 teachers from 154 schools in England	Lower and upper secondary	Multilevel latent profile analysis	Self-efficacy	Job satisfaction and occupational commitment	Journal Article
2020	Corso-de-Zúñiga., Moreno-Jiménez, Garrosa, Blanco-Donoso, L, & Carmona-Cobo, 2020.	430 teachers at Peruvian private schools	Primary and secondary	Structural equation modeling	Hardiness	Work engagement, job burnout	Journal Article
2020	Collie, Guay, Martin, Caldecott-Davis, & Granziera, 2020.	264 Australian secondary school teachers	Secondary	Structural equation modeling	Adaptability, buoyancy	Extra-role behavior, organizational commitment, failure avoidance	Journal Article

2019	Soykan, Gardner, & Edwards, 2019.	1502 New Zealand teachers	K-12	Bivariate correlation analysis	Psychological capital - hope, resilience, optimism, self-efficacy	Stress, wellbeing, appraisal, coping	Journal Article
2019	Salmela-Aro., Hietajärvi, & Lonka, 2019.	149 teachers from 22 Finnish Schools	Mostly high school with some elementary	Latent profile analysis	Resilience	Burnout and engagement	Journal Article
2019	Guidetti, Viotti, Badagliacca, & Colombo, & Converso, 2019.	primary, middle, and secondary school teachers in Northern Italy	Primary, middle, and secondary	Bivariate correlations	Mindfulness	Burnout, work meaningfulness	Journal Article
2019	Huang, Yin, & Lv, 2019.	1115 primary school teachers in Hong Kong	Primary	Structural equation modelling	Self-efficacy	Enthusiasm, contentment, anxiety, and depression	Journal Article
2019	Zhang, Zhang, & Hua, 2019	386 Chinese Primary and secondary school teachers	Primary and Secondary	Structural equation modeling	Psychological capital - hope, resilience, optimism, self-efficacy	occupational stress, teacher burnout	Journal Article
2018	Yin, Huang, Lv, 2018.	1656 primary and secondary school teachers in Hong Kong	Primary and secondary	Hierarchical linear modelling	Reappraisal	contentment, enthusiasm	Journal Article
2018	Collie, Granziera, & Martin, 2018.	164 Australian Secondary School teachers	Secondary	Structural equation modeling	Adaptability	Disengagement, exhaustion, organizational commitment	Journal Article
2016	Bermejo, Prieto-Ursua, Hernandez-Franco, 2016.	413 teachers from 47 elementary, primary and secondary schools in Madrid (Spain)	Elementary and Secondary	Structural equation modeling	Cognitive and behavioral coping	Burnout, engagement	Journal Article

2011	Boudrias,, Desrumaux, Gaudreau, Nelson, Brunet, & Savoie, 2011.	391 teachers	French	Primary and Secondary	Structural equation modeling	Optimism, resilience	Psychologic al health and wellbeing, need satisfaction	Journal Article
2008	Lorente Prieto, Salanova, Martinez, & Schaufeli, 2008.	274 Secondary- school teachers	Spanish	Secondary	Hierarchica l linear modelling	Mental and emotional competencies	Burnout and engagement	Journal Article

Results

General Characteristics of Included Studies

Final analyses revealed 17 articles eligible for inclusion. The average sample size of the studies was 1469 teachers ($SD = 2514$). Although some early research on personal resources in relation to teachers' wellbeing was conducted in the period between 2008 and 2011, the vast bulk of research attending to this phenomenon occurred from 2016 onwards. Indeed, 88% of studies occurred post-2016.

Distribution by Country of Publication

The majority of studies conducted research in a single country ($n = 16$). Two studies conducted a comparative examination of teachers; in both studies, teachers in Australia and England were included. The vast bulk of research examined teachers within Western Education systems (Hassan et al., 2013), with only three studies considering the experiences of teachers within Eastern Educational contexts (two in Hong Kong and one in China; Huang et al., 2019; Yin et al., 2018; Zhang et al., 2019). The greatest number of studies were conducted among Australian teachers ($n = 5$) and British ($n = 3$) teachers.

Distribution by School Level

Notably, the bulk of studies considered the personal resources of secondary teachers, or of teachers across the spectrum of

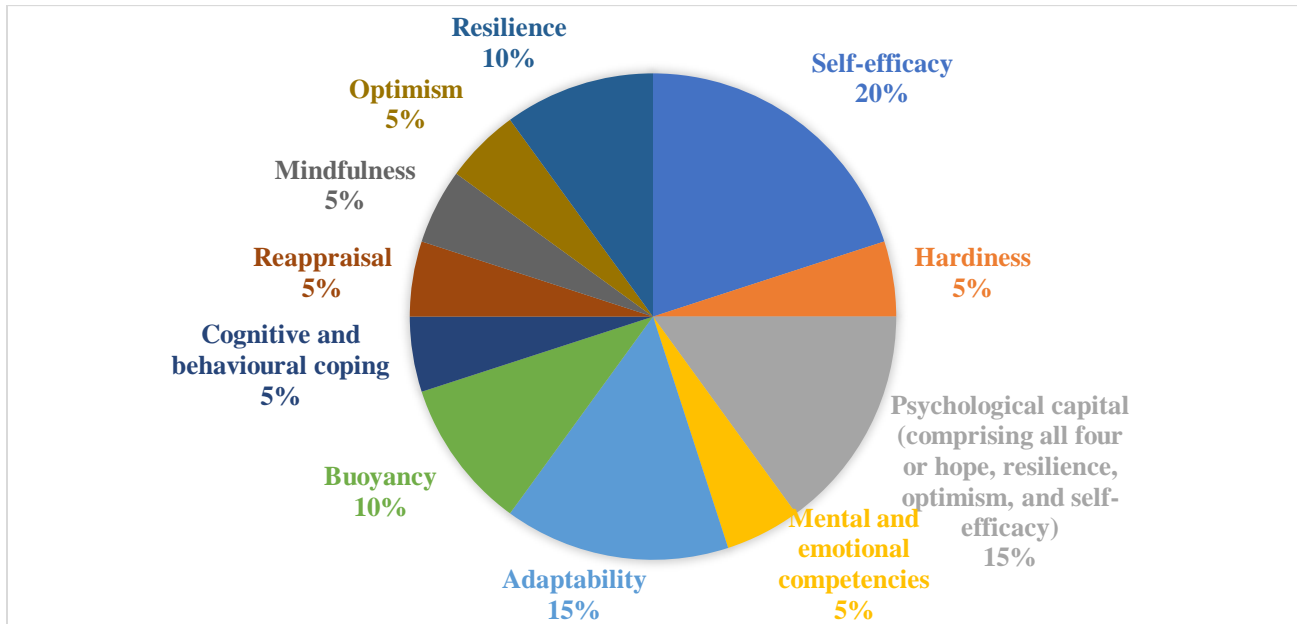
primary/elementary, middle, and secondary schools. In some instances, teachers taught in schools which were designated K-12 institutions (e.g., Roethler, 2021), while in others a pooled sample of teachers from primary/elementary, middle, and secondary schools was examined (e.g., Guidetti et al., 2019). Only two studies focused solely on the personal resources of primary/elementary teachers (Granziera, 2022; Huang et al., 2019).

Methodological Approach Adopted

Correlational analyses were the dominant methodological approach adopted in the identified studies, with both hierarchical linear modelling and structural equation modelling featuring heavily among the identified studies. Two studies adopted multilevel latent profile analysis (Collie et al., 2020; Collie et al., 2021), one study adopted latent profile analysis (Salmelo-Aro et al., 2019), and one thesis adopted structural equation modelling and latent profile analysis in tandem (Granziera, 2022).

Personal Resources

As per the selection criteria, all studies considered personal resources within the context of Job Demands-Resources theory. The comparative frequency with which these resources were examined is shown in Figure 2.

Figure 2*Personal Resources Examined and Their Relative Frequency*

In total, 11 personal resources were examined among the studies, with self-efficacy featuring most frequently ($n = 7$). However, it is important to note that of these studies, three examined self-efficacy as a dimension of psychological capital, rather than as a construct on its own (Roethler, 2021; Soykan et al., 2019; Zhang et al., 2019). Psychological capital was the second most studied personal resource; three studies examined all four dimensions of psychological capital (hope, resilience, optimism, and self-efficacy), one examined optimism and resilience as dimensions of psychological capital (Boudrias et al., 2011), and another focused solely on resilience (Salmelo-Aro et al., 2019).

Aside from psychological capital, in which four dimensions of the construct were examined, two studies examined two personal resources simultaneously. Collie et al. (2020) examined adaptability and buoyancy among secondary school teachers and Granziera (2022) examined self-efficacy and adaptability among primary school teachers. The remaining studies examined cognitive and behavioral coping, hardiness, mental and emotional competencies, mindfulness, and reappraisal as personal resources.

To further understand the nature of the personal resources examined and to establish avenues for further research, the identified resources were categorised as affective-cognitive or behavioral-practical. As no formal definition of these categories has been proposed in the context of JD-R theory, affective-cognitive resources were defined as those which require significant investment of emotion or thought- e.g., psychological capital-, while behavioral-practical resources involved investment of physical or behavioral energy – e.g., behavioral coping. To determine the category each resource fell into, the definition used by the study author/s was consulted. These definitions and their classification are shown in Table 3.

Table 3*Personal Resources Examined and Their Definitions*

Personal Resource	Definition	Classification (AC/BP[^])
Adaptability	An individual's capacity to respond effectively to change, and to adjust their thoughts, emotions, and behaviors	AC/BP
Buoyancy	The ability to effectively deal with the challenge and adversity that are part of work, and that occur for many	AC
Cognitive and behavioral coping	Reactive and proactive coping strategies	AC/BP
Hardiness	Hardiness consists of three different attitudes: commitment, control, and challenge. Commitment refers to the tendency to commit to the events and people close to oneself, regardless of how stressful a situation involving them may become. As such, committed individuals find meaning and purpose in the events and people they encounter in their daily lives. Control refers to the tendency to feel and act as if one has influence over the events surrounding oneself. The last dimension, challenge, is the disposition to perceive obstacles as challenges rather than threats.	AC
Mental and emotional competencies	The degree to which teachers feel mentally and emotionally competent to face job demands	AC
Mindfulness	The ability to maintain awareness and attention at the present moment	AC
Optimism	The ability to attribute positive events to internal, lasting and global causes, and to attribute negative events to external, temporary and specific causes	AC
Psychological capital (comprising all four or hope, resilience, optimism, and self-efficacy)	A positive psychological concept that is a conglomerate of the concepts of hope, optimism, resiliency, and self-efficacy. Self-efficacy is the perception that one possesses the necessary abilities to be able to engage with a task and achieve success. Hope is a positive expectation about the future; it includes a belief in the ability to identify and achieve personally important goals. Optimism relates to the ability to attribute positive events to internal, lasting and global causes, and to attribute negative events to external, temporary and specific causes. The fourth component, resilience, is the ability to handle adversity through adaptation and positive coping.	AC
Reappraisal	An individuals' ability to efficiently control their emotions and to adapt themselves to environment	AC/BP
Resilience	The ability to handle adversity through adaptation and positive coping	AC
Self-efficacy	Self-efficacy is the perception that one possesses the necessary abilities to be able to engage with a task and achieve success	AC

[^] AC: Affective-cognitive; BP: Behavioral Practical.

Of the personal resources examined, eight met the criteria for affective-cognitive resources. The remaining three consisted of both affective-cognitive and behavioral-practical components; for instance, adaptability referred to an individual's ability to adjust both their emotions and cognitions in addition to their behaviors.

A further aim of the review was to determine the outcomes with which personal resources had been examined in relation to. These outcomes are described in Table 4 and the frequency with which they were examined is shown in Figure 3.

Outcome/s Examined

Table 4

Outcomes and Their Definitions Adopted in the Included Studies

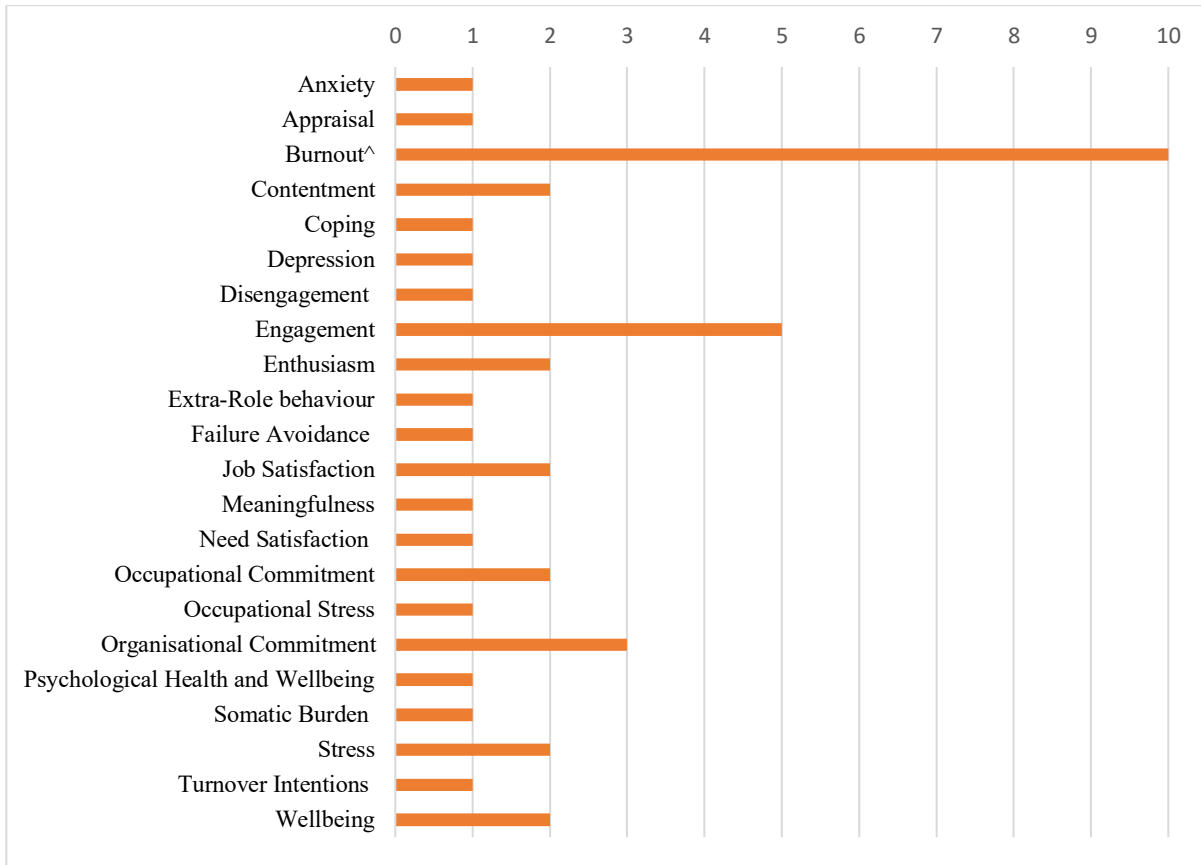
Outcome	Definition used in study	Classification
Anxiety	An unpleasant and activated psychological status. Tense, uneasy, and worried.	P
Appraisal	The assessment of the significance and relevance of demands at work and belief that one possesses sufficient resources to meet those demands.	G
Burnout [^]	A prolonged response to chronic emotional and interpersonal stressors. Burnout is considered to comprise one or more dimensions: cynicism, emotional exhaustion, and depersonalization.	P
Contentment	a pleasant and deactivated state. Calm, contented, and relaxed.	P
Coping	The constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing.	P
Depression	Depressed, gloomy, and miserable	P
Disengagement	Maladaptive coping strategy, whereby teachers continue to do their teaching work, but have largely 'given up' and thus put limited effort into their work.	G
Engagement	High dedication, energy, and absorption at work	G
Enthusiasm	An activated and pleasant state. cheerful, enthusiastic, optimistic	P
Extra-Role behavior	Socially responsible actions that individuals voluntarily undertake at work that go beyond what is expected in their role	G
Failure Avoidance	Failure avoidance motivation occurs when individuals are motivated by the desire to avoid doing poorly on tasks or disappointing others	P
Job Satisfaction	Contentment regarding one's job	G
Meaningfulness	Perceived meaningfulness of work represents an important source of intrinsic reward, where teaching constitutes a way of expressing oneself as a human being by working with and influencing students	P

Need Satisfaction		A nine-item scale was used to measure the satisfaction of need for autonomy (e.g., “I can use my judgment to solve problems in my job”), competence (e.g., “I feel competent in my job”) and affiliation (“I feel understood by others in my workplace”).	P
Occupational Commitment		Attachment to one's profession	Occ
Occupational Stress		Stress as a result of an occupation which threatens an individual's goals, resulting in a series of physical, psychological and behavioral responses.	Occ
Organizational Commitment		Psychological state related to an employee's relationship with, and willingness to continue as a part of the organization with which they are affiliated	Org
Psychological and Wellbeing	Health	A 24-itemscale measured well-being as indexed by social or work engagement, sociability, and personal control and happiness	P
Somatic Burden		Individuals' experiences of physical symptoms, such as back or joint pain, headaches, shortness of breath, dizziness, or trouble sleeping	P
Stress		The experience of unpleasant emotions resulting from teaching work	P
Turnover Intentions		Attitudes, thoughts, plans, or behaviors to leave the current position.	Org
Wellbeing		Conceptualised as high levels of positive affect and low levels of negative affect.	P

P = Personal outcome; Occ = Occupational Outcome; Org = Organizational Outcome; G = Global work outcome

Figure 3

Outcomes Examined and Their Frequency

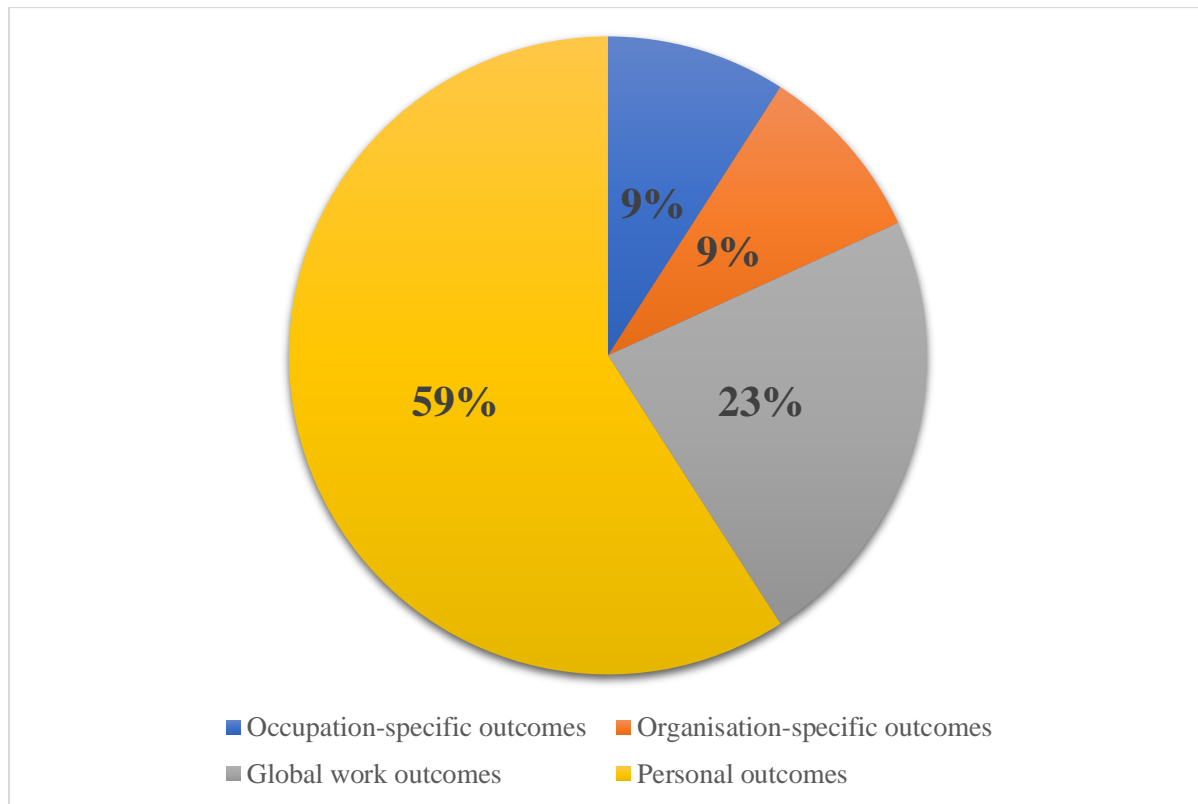


^comprising one or more of cynicism, depersonalisation, emotional exhaustion

As this Figure demonstrates, the vast majority of studies have considered personal resources in relation to burnout and engagement, which reflect the core health impairment and motivational processes posited by JD-R theory.

To further nuance understandings of the outcomes which were the subject of the studies, the outcomes were categorised as those which were primarily related to the occupation of teaching (e.g., occupational commitment, or commitment to the teaching profession), those which impacted the organization the teacher was part of (e.g., organizational commitment), those which primarily affected the individual (e.g., somatic burden), and those which were considered global (i.e., related work-related outcomes which did not use the organization or occupation as reference

points; e.g., global job satisfaction). To determine the appropriate classification, the definition used by the study was consulted, alongside the scales used to identify whether the organization, occupation, or individual were the reference point (e.g., the scale used specifically stated “my occupation”), or whether the reference point was work more globally. This classification is shown in Table 4 and represented in Figure 4.

Figure 4*Categories of Outcomes in the Included Studies*

As can be seen in Figure 4, the vast majority of studies considered how personal resources were related to personal wellbeing outcomes – e.g., enthusiasm and stress. Just over 20% of studies considered global work outcomes, while 9% of studies considered outcomes related to the occupation and another 9% of studies considered the organization specifically.

An additional aim of the study was to identify the patterns in terms of which personal resources had been examined in relation to specific outcomes. As Table 5 shows, self-efficacy

is the personal resource that has been examined in relation to the greatest number of outcomes ($n = 10$), followed by adaptability, buoyancy, and psychological capital, each of which have been examined in relation to seven outcomes. Whereas self-efficacy was examined in relation to a mix of occupation-specific, organization-specific, global work, and personal outcomes, adaptability and buoyancy tended to be examined with respect to organization-specific and personal outcomes.

Table 5*Personal Resources and the Outcomes Examined in Relation to*

Personal Resource	Outcome examined in relation to
Adaptability	- Disengagement
	- Emotional Exhaustion

	<ul style="list-style-type: none"> - Engagement - Extra-role behavior - Failure avoidance - Organizational commitment - Turnover Intentions <p>(Collie et al., 2018; Collie et al., 2020; Granziera, 2022)</p>
Buoyancy	<ul style="list-style-type: none"> - Emotional Exhaustion - Extra-role behavior - Failure avoidance - Organizational commitment - Somatic Burden - Stress - Turnover intentions <p>(Collie et al., 2020; Collie, 2021)</p>
Cognitive and behavioral coping	<ul style="list-style-type: none"> - Burnout - Engagement <p>(Bermejo et al., 2016).</p>
Hardiness	<ul style="list-style-type: none"> - Burnout - Engagement <p>(Corso-de-Zúñiga et al., 2020)</p>
Mental and emotional competencies	<ul style="list-style-type: none"> - Burnout - Engagement <p>(Lorente-Prieto et al., 2008)</p>
Mindfulness	<ul style="list-style-type: none"> - Burnout - Work meaningfulness <p>(Giudetti et al., 2019)</p>
Optimism[^]	<ul style="list-style-type: none"> - Need Satisfaction - Psychological Health and Wellbeing <p>(Boudrias et al., 2011)</p>
Psychological capital (comprising all four or hope, resilience, optimism, and self-efficacy)	<ul style="list-style-type: none"> - Appraisal - Burnout - Coping - Engagement - Occupational Stress - Stress - Wellbeing <p>(Roethler, 2021; Soykan et al., 2019; Zhang et al., 2019)</p>
Reappraisal	<ul style="list-style-type: none"> - Contentment - Enthusiasm

(Yin et al., 2018)	
Resilience[^]	<ul style="list-style-type: none"> - Burnout - Engagement - Need Satisfaction - Psychological Health and Wellbeing (Boudrias et al., 2011; Salmelo-Aro et al., 2019)
Self-efficacy[^]	<ul style="list-style-type: none"> - Anxiety - Contentment - Depression - Emotional Exhaustion - Engagement - Enthusiasm - Job Satisfaction - Occupational Commitment - Organizational Commitment - Turnover Intentions (Collie et al., 2020, 2021; Granziera, 2022; Huang et al., 2019)

[^]Analyzed as single constructs, not part of Psychological Capital.

Discussion

The present review harnessed Job Demands-Resources theory to examine the personal resources which have been studied in teaching populations and the outcomes with which such resources have been associated. The aim of this scoping review was to draw together work that has been done previously to clarify the way personal resources have been conceptualised and to establish an agenda for future work in this area. Extending understanding of personal resources is important as they appear to be malleable characteristics (Schaufeli, 2017) which teachers may seek to cultivate to affect their working environment. That is, whereas modifying job resources and job demands may take time and require the support of others, personal resources may be capacities that an individual can modify more readily, thus potentially affecting positive change in the work environment (van Wingerden et al., 2017).

Given that personal resources are still a relatively new phenomenon, the aim of this review was to conduct a preliminary examination of the personal resources that have been examined in populations of teachers, the outcomes with which they have

been examined in relation to, and to identify future research directions to strengthen the existing evidence base. Doing so may enable the development of interventions focused on enhancing teachers' personal resources, and ultimately fostering greater wellbeing. As described above, the scoping review identified 17 studies which examined a range of personal resources. Taken together, analysis of the central characteristics of these studies revealed a number of patterns of note and considerable avenues for further research. These are discussed below.

The Nature of Personal Resources

Analysis of the eligible studies revealed self-efficacy to be the most-studied resource among teachers. This is unsurprising given its relative popularity in contemporary research (Shunk & DiBenedetto, 2021), and particularly as part of the Job Demands-Resources framework since the inclusion of personal resources in 2007. Given the proliferation of research examining self-efficacy as a personal resource among teachers, there is arguably a need to extend this research to address new empirical questions. For instance, per the definition adopted by Xanthopoulou et al. (2009), self-efficacy is considered to be an

affective-cognitive capacity. To further nuance understanding of self-efficacy, future research may seek to contrast the relative salience of self-efficacy as an affective-cognitive resource with personal resources that are of a behavioral-practical nature, to determine whether these resources operate differently depending on the nature of the outcome. Further still, there is a need to determine whether self-efficacy is salient across different teaching populations and cultural groups – particularly those which favour collectivist orientations (Evans, 2014).

Interestingly, while Xanthopoulou et al. (2009) highlighted the distinction between affective-cognitive and behavioral-practical personal resources, few studies adopted such classifications or sought to disentangle the nature of these. This may reflect the fact that certain personal resources – e.g., adaptability - comprise both affective and behavioral components, making distinct classifications challenging. Future research should attempt to further distil these definitions and to examine resources specific to the teaching context which characterize these comparative classifications.

Comparison of the personal resources further revealed considerable overlap in terms of the definitions of particular resources. For instance, resilience was described as the ability to handle adversity through adaptation and positive coping (Salmelo-Aro et al., 2019), and cognitive and behavioral coping was described as reactive and proactive coping strategies (Bermejo et al., 2016). Moving forward, there may be merit in aligning conceptual definitions in order to strengthen comparability between studies and to establish a more robust evidence base.

Consistent with the ever-evolving nature of the school environment (Hamm, 2021), future research may also consider broadening the range of personal resources. For instance, task prioritization or organizational skills may be personal resources that are particularly useful in dynamic teaching environments.

The Distinction Between Personal, Organizational, and Occupational Outcomes of Personal Resources

Analysis of the outcomes across the included studies revealed a distinction between those which were concerned with the organization, those which were concerned with the broader occupation, and those which related to individual teacher wellbeing. Moving forward, research investigating teachers' personal resources should consider the category of outcome that is most pertinent to the teaching population under examination and the broader goals of the research. For instance, if there are notable patterns of attrition in a certain organization, researchers may consider organization-related outcomes (e.g., organizational commitment, organization-specific turnover intentions). Similarly, if the research is concerned with teacher attrition and retention more broadly, occupation-specific outcomes may be considered.

A further direction for research may be to align the nature of the personal resources examined with the nature of the outcome. The match principle (Jonge & Dormann, 2006) suggests that certain resources or demands, and their specific combination, may be particularly salient for certain outcomes. Given that research into personal resources has begun to make a distinction between those of an affective-cognitive or behavioral-practical nature, it may be that a particular personal resource – e.g., optimism, is particularly important for a specific outcome – e.g., affective commitment – given that both comprise strong affective components.

Although the comparative abundance of research examining individual wellbeing outcomes provides important directions for interventions focusing on personal outcomes, it will also be important to examine a broader range of organization- and occupation-related outcomes. For instance, although occupational commitment has been identified as the single strongest predictor of actual turnover in employees (Liu & Onwuegbuzie, 2012), and is thus of considerable interest when examining organizational and occupational attrition, only one study considered how personal resources were involved in this process. To the extent that specific personal resources are found to be salient in enhancing organizational or occupational outcomes, this may provide an avenue for interventions addressing broader attrition and retention issues.

The Need for Diverse Methodologies

Examination of the methodological approaches adopted in the aforementioned studies revealed a clear preference for correlational and variable-centered analyses. Such analyses unearthed important associations between the personal resources and the outcomes; for instance, self-efficacy was consistently found to negatively predict burnout and positively predict engagement. However, few studies sought to examine different personal resources simultaneously to determine the relative salience. Conducting such analyses may be important to understand the relative strength of each resource – particularly in comparing resources of an affective-cognitive and behavioral-practical nature- and potential differences in their associations with outcomes. For example, self-efficacy may be more important for individual affective outcomes - such as life satisfaction- as it is primarily affective-cognitive, whereas adaptability may be more important for behavioral-practical outcomes, such as behavioral engagement.

The analyses conducted in the present study also suggest the need to further diversify the methodological approaches when investigating personal resources among teaching populations to better understand potential nuances. Accordingly, both person-centered and multilevel approaches have the potential to yield unique information about interactions between different types of personal resources and potential joint effects with job resources. Whereas variable-centered approaches assume that individuals within a sample are drawn from a single population, person-centered approaches consider that there may be multiple subpopulations characterised by unique sets of parameters (Morin et al., 2018), allowing for the acknowledgment that variables combine differently for different individuals. Thus, person-centered approaches identify different subpopulations (or profiles) of individuals who are characterised by similar experiences—such as their combination of personal resources. More specifically, certain personal resources may have joint effects, such that when recruited simultaneously they result in more optimal outcomes. For example, in one of

the few studies to adopt a person-centered approach, Granziera (2022) revealed that the teachers who were high in two personal resources – adaptability and self-efficacy- reported the most adaptive outcomes in terms of wellbeing and retention-related variables. Further research adopting person-centered methods may nuance understandings of the combinations of personal resources that yield the most positive outcomes for teachers.

As Bakker and Demerouti (2018) suggest, there is also a need to conduct further multilevel research to both extend knowledge of personal resources and broader JD-R theory. This is particularly pertinent given that Collie et al. (2020, 2021) revealed school-level phenomena – e.g., supportive leadership – may be associated with different average levels of personal resources between schools. Thus, the interactions between school- and organization-level phenomena and teachers' personal resources is an area for further investigation. Such knowledge is important as identifying these patterns may allow for interventions that are targeted to the unique needs of a particular school.

The Need for Further Cross-National Perspectives

Although three of the studies examined the experiences of teachers in Eastern cultures, most studies considered the experiences of teachers in Western countries. Emerging research indicates that cultural differences may influence teachers' psychological characteristics. For instance, Wang et al. (2019) reported a positive association between deep acting and wellbeing, whereas a negative correlation was reported in samples of Western teachers. The dominance of the collectivist culture in Eastern countries (Hofstede, 2011) may mean teachers view collective resources – e.g., collective efficacy- as being more important in the process of occupational wellbeing than individual resources (Klassen et al., 2010), which may be seen as self-serving. There may also be differences in reporting of personal resources due to a culture of modesty bias (Klassen, 2004). For instance, Klassen et al. (2010) reported that teachers in Eastern cultures held lower self-efficacy beliefs than their Western colleagues, in part due to a

culture of being self-effacing. Similarly, optimism – which was frequently examined as a personal resource among the studies included in the present review- may be viewed as being at odds with the culture of realism and conformity which characterise collectivist cultures (Klassen, 2004).

These findings pose a number of avenues for further research. Specifically, further investigation of personal resources in non-Western cultures is required. In addition to further exploration of personal resources among Eastern cultures there is also a need for diversity in exploration within this broad cultural group. For example, the three studies which did consider teachers' personal resources in Eastern cultures were all conducted in Hong Kong or China, which differ culturally from other groups, such as Korean or Iranian cultures (Klassen et al., 2010; Noughabi et al., 2022). Further investigations are required to provide more nuanced insights into this phenomenon among non-Western nations. Moreover, there is a need to conceptualise personal resources which may reflect both the individual and collective components of wellbeing within these cultural groups. Future studies may, for example, wish to consider collective efficacy as being a relevant personal resource in collectivist cultures.

The Need for More Nuanced School Level Work

The vast majority of studies either focused on the experiences of secondary school teachers, or considered teachers from primary and secondary schools as being a largely homogenous population. There is a need for more nuanced examinations of teachers' personal resources by the level at which they teach, given the established differences in the nature of work among primary and secondary teachers. For example, although secondary school teachers teach a range of students each day, primary school teachers have a single class for whom they are responsible (OECD, 2019). Primary school teachers thus play a greater role in fostering students' social and emotional attributes, which may deplete their personal resources differentially to secondary school teachers, who are mostly responsible for developing students' academic outcomes (Lester & Cross, 2015). For example, Yilmaz et al. (2015)

found elementary teachers to report higher levels of emotional labor than their secondary counterparts. Accordingly, personal resources which assist primary/elementary teachers manage emotional labor may be important for these teachers than for secondary teachers.

Further, the need to teach all areas of the curriculum, as opposed to the one or two required by secondary teachers, may also contribute to differential experiences of resource depletion and recruitment. The need to possess knowledge of a broad range of curriculum areas may be cognitively taxing (Lester & Cross, 2015), thus rendering those personal resources which alleviate cognitive burden – e.g., mindfulness (Hsieh, 2021) as being more salient for elementary/primary teachers. Further research comparing these populations may shed light on the comparative salience of specific personal resources for teachers in primary, middle, and secondary contexts.

Limitations

Although the present review yields important insights into the nature of teachers' personal resources, it is important to acknowledge some limitations. Although the study rigorously followed the PRISMA guidelines for scoping reviews and was consistent with the criteria for single-step screening given the low number of studies to be examined (Waffenschmidt et al., 2019), future research employing 2-step screening will be important to further validate the findings. Further, a number of studies were excluded as they were not in English, thus potentially excluding pertinent information regarding the nature of personal resources and their applicability across different national contexts. Future research should endeavor to translate these studies to facilitate a more robust research base. Similarly, some studies were excluded because although their pooled sample comprised primary and secondary teachers, they also included early childhood and university educators. Future research should attempt to examine the personal resources used in such studies with samples of primary and secondary teachers.

Conclusion

Teaching is an undeniably challenging profession (Collie, 2021). Therefore, supporting teachers to experience positive psychological functioning at work is an important goal. The present review harnessed Job Demands-Resources theory (Demerouti et al., 2001) to consider the personal resources which have been examined in relation to teachers' wellbeing outcomes and the outcomes with which such resources have been associated. Taken together, the review further clarified definitions used in the research area and identified a number of gaps in the present literature which may provide direction for future research. Such information may be important for the development of interventions which further foster teachers' wellbeing.

Statements and Declarations

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