Reviewing the evidence base on school leadership, culture, climate and structure for teacher retention

Rapid evidence assessment

October 2023

Dong Nguyen, Beng Huat See, Chris Brown, Dimitra Kokotsaki

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For more information about the EEF or this report please contact:

Education Endowment Foundation
5th Floor, Millbank Tower
21–24 Millbank
SW1P 4QP

info@eefoundation.org.uk

www.educationendowmentfoundation.org.uk

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Executive summary

Teacher retention has been a persistent challenge internationally and in England. Failure to recruit and retain qualified teachers may result in teacher shortage that has a negative effect on student learning. This issue is exacerbated in challenging schools with high proportions of disadvantaged students. Addressing this issue requires the collective efforts of policy and practice, well informed by a systematic, in-depth understanding of the robust research evidence base. The organisational characteristics, such as leadership, culture, climate, and structure, are critical in influencing teacher retention. However, we lacked a systematic exploration of the extant evidence base on these characteristics to enable such an understanding. We conducted a rapid review of the evidence base to identify the characteristics of school leadership, culture, climate, and structure that potentially support teacher retention.

This rapid evidence assessment shortlisted and appraised 399 relevant research outputs, published between January 2000 and May 2023. This total number of 399 outputs comprises 387 outputs of empirical research and 12 of previous reviews. These 387 outputs are based on analyses of the data collected in more than 60 countries. The key, substantive findings, presented in the current report, are mainly based on a synthesis of 89 empirical research publications that meet this review's quality assessment. Collectively these 89 publications form the core evidence base, which the current report draws on.

The evidence base highlights three interrelated leadership approaches and their associated practices to support teacher retention: (i) *prioritising teacher development*; (ii) *building relational trust*; and (iii) *improving working conditions*. The review also underscores four prominent characteristics of school culture, climate, and structure that promote *collegiality*, *positive school discipline*, *intellectual stimulation*, and *equity in workload arrangements* and *support distribution*.

The current report, based on this evidence base, calls for concerted efforts to support quality professional development for school leaders to enact those potential leadership approaches and practices and to creatively contextualise configurations of workload in their schools, to motivate and retain teachers. It recommends robust design and delivery of longitudinal and experimental studies to measure impacts of these efforts to inform timely actions.

Rationale for the review

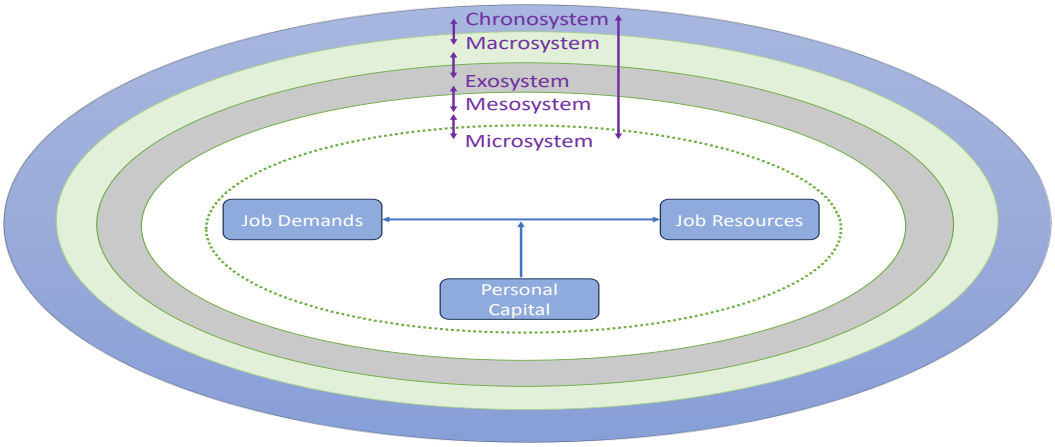
Teacher retention has been a persistent challenge (European Union, 2013; Sutcher et al., 2016; See et al., 2020) internationally and in England (Long and Danechi, 2022; McLean et al., 2023). Failure to recruit and retain qualified teachers may result in teacher shortages that have negative effects on student learning (Gerritsen et al., 2016; Sorensen and Ladd, 2018). This issue is exacerbated in challenging schools with high proportions of disadvantaged students (Tereshchenko et al., 2020). Addressing this issue requires the collective efforts of policy and practice, well informed by a systematic, in-depth understanding of the robust research evidence base.

Theoretical perspectives on retaining employees across sectors and in education suggest the need for an integrative approach to understand retention. The basic framework in Figure 1, built on three influential theories (by French et al., 1974; Bronfenbrenner, 1979; and Bakker and Demerouti, 2007), highlights a compound of interacting layers of factors influencing teacher retention. The **chronosystem** refers to the cultural aspects/beliefs and social status of the teaching profession. The **macrosystem** includes national or state policies related to the teaching profession, for example, teacher salary and workload. The **exosystem** consists of the local policies and characteristics of regions/local authorities/communities where school are located. The **mesosystem** describes the relationships between schools and the local authority/community. The **microsystem** includes job demands, job resources, and teacher personal capital. Examples of job demands are role responsibility, workload, and emotional labour. Job resources include organisation-level characteristics such as leadership support, peer support, professional autonomy, and professional development opportunities, among others. Interpretation of the Job Demands-Resources model (Bakker and Demerouti, 2007) says that a high degree of incompatibility between job demands and job resources increases teachers' burnout and chance of departure from an organisation. Teacher personal capital such as resilience and efficacy could moderate the Job Demands-Resources relationships (fit or misfit).

Research on teacher retention generally supports the broad assumptions of these theoretical perspectives. For example, the review of See et al. (2020) confirms that financial incentives could be a temporarily effective approach. Beyond this financial approach, research has suggested a multiplicity of possible organisation-level factors, in the **microsystem layer**, to support teacher retention through enhancing their job resources (European Union, 2013; Geiger and Pivovarova, 2018; Shen et al., 2012). It is, therefore, of paramount importance to systematically understand what characteristics of these factors would contribute to attracting and retaining teachers and to promote such characteristics. However, we lacked a systematic exploration of the extant evidence base on those characteristics to enable such an understanding. For this reason, we undertook a systematic scoping review of the contemporary evidence base on key characteristics of school leadership, culture, climate, and structure that support teacher recruitment and retention and promotion of other teacher outcomes proximally linked to retention.

In this report, 'support' refers to providing teachers with intellectual, practical, and emotional assistance to perform their professional duties and responsibilities. We use the term 'characteristics' as an umbrella term to include approaches, processes, practices, strategies, or features. We characterise 'disadvantaged schools' as those with a high proportion of students with special needs, low-income families and free school meals, and/or ethnic minority students.

Figure 1. Theoretical perspectives on factors influencing teacher retention



The current review aimed to address three key questions as follows. Appendix 1 describes the process of developing these research questions (RQs).

RQ1. What school leadership characteristics support teacher retention?

RQ2. What characteristics of school culture, climate, and structure support teacher retention?

RQ3. What characteristics of school leadership, culture, climate, and structure support teacher retention in disadvantaged schools?

Defining key concepts

Informed by previous work (e.g., Guarino et al., 2006; Kelchetermans, 2017; See et al, 2020), we define **teacher retention** as (the goal of) keeping qualified teachers in schools and reducing the number of qualified teachers making premature exits from the profession. In this review, we also considered the concepts and outcomes that are proximally linked, as suggested in the literature (e.g., Boyd et al., 2011; Madigan and Kim, 2021; Van Droogenbroeck and Spruyt, 2014; Wronowski and Urick, 2019), with teacher retention. These are: *teacher intent to leave/stay*; *teacher professional wellbeing*; *teacher burnout; professional/organisational commitment*; and *job satisfaction*.

Drawing on popular conceptualisations (Schein, 1992; Schoen and Teddlie, 2008), we view **school culture** as (un)written ways that people in a school act, treat, and value one another, and work together towards the school's vision and goals. These conceptualisations suggest that the school culture can be explored at three levels: artefacts (e.g., visible organisational structures, school policy documents); espoused values (e.g., organisational strategies); and basic assumptions (e.g., tacit understandings, unwritten rules in managing situations). The **school climate** is defined as the perceptions of students, teachers, leaders, and other staff regarding interpersonal relationships, social interactions, values, and beliefs within a school (Rudasill et al., 2018; Thapa et al., 2013). We define the **school/organisational structure** as the approaches or methods to divide and coordinate labour or workload in schools, based on the influential, original work of Mintzberg (1979) in the organisational science. Formal structure refers to the documented relationships among school members while informal structure can be understood as unofficial relationships within a school. These definitions suggest the overlap and interdependence of culture, climate, and structure in schools.

In this review, we define the construct of school leadership as a combination of observable approaches, processes, practices, and strategies, related to leadership, management, administration, and development and implementation of school-level policy, enacted by senior leaders in schools. These senior leaders comprise headteachers/principals and deputy headteachers/vice-principals.

Overview of methodology

Table 1. Inclusion criteria for the current review

Category of criteria	Included	Excluded
1. Study design	• Empirical, primary studies • Reviews of empirical literature	• Non-empirical research studies • 'Purely' bibliometric reviews
2. School levels	• Kindergarten-12 (K-12) settings: Primary/elementary, secondary/middle, high schools • Note: K-12 settings typically include schools for students aged from 5 to 18 and include Multi Academy Trusts	• Nursery schools and kindergartens • Higher education institutes
3. Types of evidence sources	• Peer-refereed journal articles • Other publications including *research reports*, and *books/book chapters* drawn from empirical research	• Editorial • Conference papers • Notes
4. Timeframe	January 2000 – May 2023	Publications before 2000
5. Content	A research output ***centrally*** discusses the core issues around: (1) school leadership OR (2) school culture / climate / structure AND (3) teacher retention	A research output ***peripherally*** discusses the core issues of focus in this review
6. Population	• School leaders • Teachers	NIL
7. Geographical locus	Outputs drawn from empirical research in any country or nation	NIL

This review process had five iterative stages, as visualised in Figure 2. At the onset of the review, we formulated seven criteria for inclusion and exclusion of research outputs, as outlined in Table 1. To respond to the aforementioned RQs, we collected and synthesised evidence from empirical studies (Criterion 1) conducted in public/state school settings (Criterion 2). We also engaged with the 12 previous, relevant reviews of empirical research to discuss the findings. These studies were published in academic journals, book chapters, and research reports (Criterion 3), from January 2000 to May 2023 (Criterion 4). We chose January 2000 as a starting point to locate more contemporary sources of evidence. May 2023 was a cut-off point for this current review. We only shortlisted research outputs that centrally discuss the issues in response to the RQs (Criterion 5). The shortlisted outputs must be based on those studies that centre on school leaders (e.g., headteachers and deputy headteachers) and teachers (Criterion 6). These teachers could be in-service, be retired, or have left the teaching profession. This review was inclusive of empirical research undertaken in any geographical contexts (Criterion 7).

Stage 1. Identifying research outputs

We utilised two large academic databases (Scopus and the Web of Science) and two major search engines (Google Scholar and Google) to search for relevant research outputs. The choice of these databases and

search engines is rationalised in Appendix 2. We formulated three sets of keywords based on the previous key work and relevant reviews relevant to *school leadership* (e.g., Grissom et al., 2021; Robinson et al., 2008), *school culture, climate,* and *structure* (Achistein et al., 2010; Schoen and Teddlie, 2008), and *teacher retention, recruitment,* and *other related teacher outcomes* (e.g., Borman and Dowling, 2008; See et al., 2020). These sets comprise keywords such as school leadership, school culture, school climate, organisational structure, teacher retention, teacher recruitment, teacher attribution, teacher mobility, teacher shortage, and workload. In total, all these sets have around 68 keywords and their synonyms. A full list of keywords for each set is included in Appendix 3. We used the following three combinations of sets of keywords that correspond with the priori RQs (see Appendix 3).

Combination 1. Set 1 AND Set 2.

Combination 2. Set 1 AND Set 3.

Combination 3. Set 2 AND Set 3.

We searched for relevant research reports on Google and Google Scholar that had not been published in academic journals. Informed by Haddaway et al. (2015), we considered the first 400 results on Google and Google Scholar for each set of keywords. Google Scholar has a 256-character limit and does not automatically search for truncations. Therefore, a more limited use of keywords, as compared with that for Scopus and the Web of Science, was used for the Google Scholar search. We also used the keyword 'teacher retention' to search for any further relevant research reports on Google.

To minimise errors in excluding potentially relevant research outputs, we ran these combinations separately. Table 2 summarises search results from the use of these combinations. We saved results from the search of each combination and excluded those results (automatically generated by the search systems) that are obviously irrelevant. We subsequently combined the research results from all the separate searches within a single Excel file and then removed duplicates. A total of 2,054 outputs results were retained in this stage.

This stage formally lasted from 14 April 2023 to 31 May 2023. We conducted a pilot exercise of search and discussed adjustments, for example, of key words and combinations, in early April 2023.

Table 2. Document results from the combinations

	Combination 1	**Combination 2**	**Combination 3**
Scopus	3,795	1,865	2,401
Web of Science	1,582	1,595	999
Google Scholar	400 first results	400 first results	400 first results
Google	300 first results		

Stage 2. Screening titles and abstracts

This stage involved the screening of titles, abstracts and, where available, keywords in the research outputs found in Stage 1 (see Table 2). Two members (Reviewers 1 and 5) of the review team scanned the same first 100 results of each combination from Scopus and Web of Science and discussed the rationale for inclusion and exclusion of each output. Once we had established an agreement on this practice, Reviewer 5 proceeded with scanning the remaining results for each combination for immediate relevance. Reviewer 1 and Reviewer 5 had frequent discussions when any uncertainty arose.

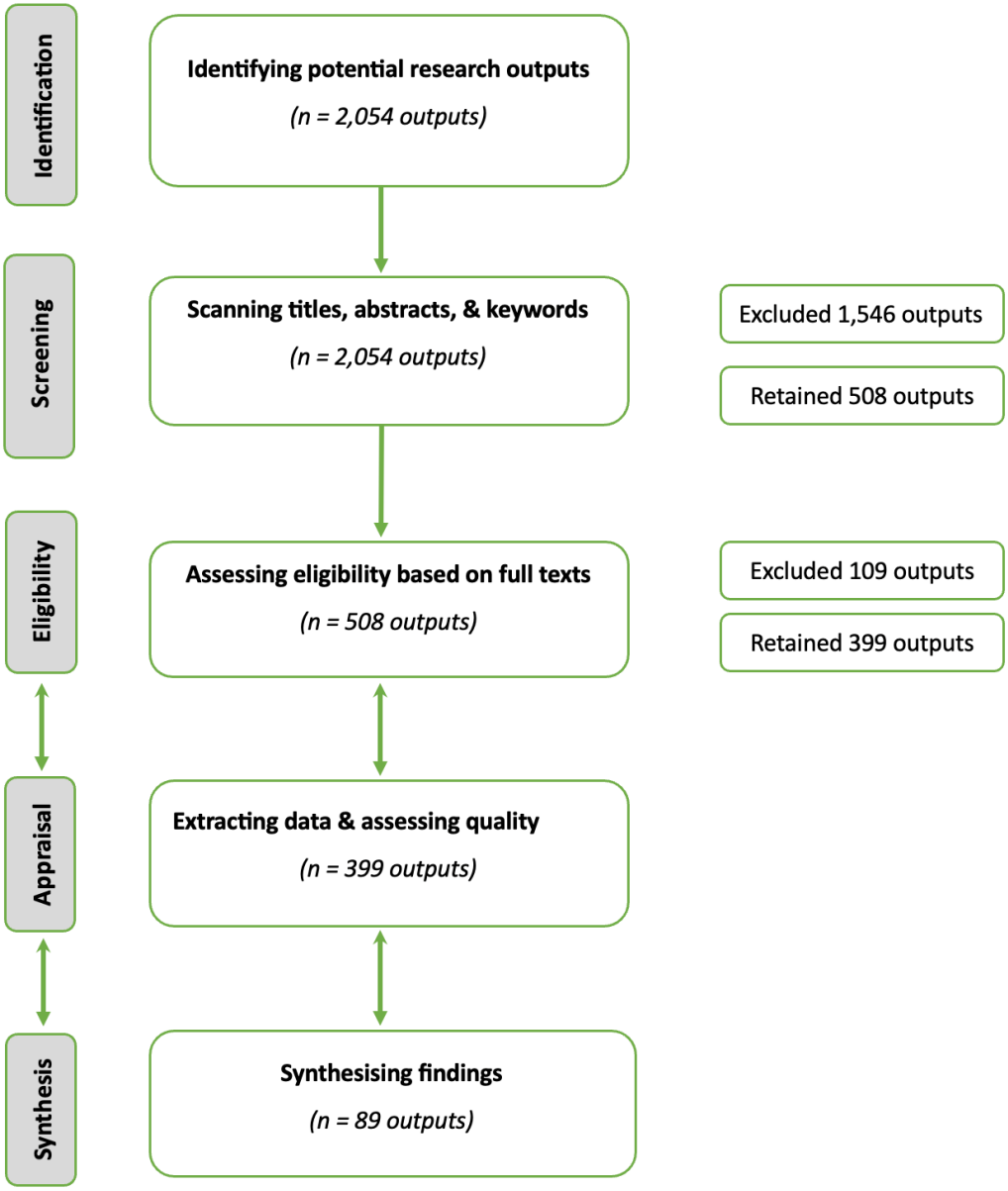
All research outputs that seemed, at face value, to discuss: *(i) leadership/management* **and/or**; *(ii) culture / climate / structure* ***in relation to***; *(iii) teacher retention and/or related outcomes*. In total, we scanned the

titles and abstracts of approx. 2,054 outputs. We shortlisted 508 research outputs for the subsequent stage, upon removing any further duplicates identified through this practice. The full texts of these research outputs were downloaded and stored in a folder for reading.

Stage 3. Assessing eligibility based on full texts

Five reviewers participated in an exercise of scanning these full texts for relevance and extracting 'data' using a template in the integrated Excel file. Appendix 4 provides details of this template. A guidance document that includes an explanation of inclusion and exclusion criteria (see Table 1) was developed and discussed in detail among all reviewers at the onset of this stage. Each research output was scanned by one reviewer. All research outputs marked 'UNCLEAR' were double scanned by another reviewer to establish an agreement on whether those could be shortlisted for evaluation. As a result, a group of 399 research outputs were retained during this stage. These 399 outputs comprise: (386) refereed journal articles; (4) book chapters; and (9) research reports.

Figure 2. PRISMA flow diagram of steps in the identification and screening of sources



Stage 4. Assessing quality of evidence

The current review aimed to identify evidence-informed characteristics of school leadership, structure, climate, and culture that support teacher retention. Having considered this key aim and the aforementioned RQs, we used three appraisal tools to assess quality of evidence and research for the purposes of this review.

We used an appraisal tool, developed by Gorard (2021), to evaluate the strength or credibility of the research evidence of the included studies that discuss these characteristics in response to the RQs of this review. This appraisal tool has five key evaluation criteria, namely design, scale of study, scale of missing data, data quality, and other threats to validity, as summarised in Appendix 5.

We employed the tool in Appendix 6 to appraise the shortlisted research outputs drawn from analyses of qualitative data that consider teachers' perspectives and experiences. This practice was inclusive of teachers' narrative evidence (NE) on the factors that might influence their retention, wellbeing, job satisfaction, organisational commitment, and burnout. As presented in Appendix 6, this appraisal tool guides an evaluation of the appropriateness of the utilised methodology, sampling, research settings, data analysis, interpretation of findings, and conclusions.

To shortlist the relevant review studies, we utilised the tool in Appendix 7. The tool has a checklist of eight items that evaluate appropriateness of their adopted methods to search for and appraise studies and synthesise the findings from those shortlisted studies, to respond to the explicitly stated RQs. This exercise aimed to select quality reviews of empirical research evidence on the issues (e.g., teacher mobility) relevant to this review. The findings from these reviews were discussed in this report.

Five reviewers were jointly responsible for appraising shortlisted research outputs. All outputs marked 'UNCLEAR' were appraised by two reviewers. A random sample of 10% of the total number of these shortlisted outputs were cross-checked between the reviewers. Reviewers discussed any differences in and agreed on ranking evidence in moderation meetings.

Stage 5. Synthesising findings

This stage synthesised findings across the reviewed studies in response to the RQs. Four reviewers (1, 2, 3, and 4) participated in conducting this stage. To obtain an overview of the evidence base, we first took an overall look at the completed Excel file with the details on key findings, methods, research contexts, rating of quality appraisal, and commentary on evidence. Once it was deemed necessary, we re-read the full texts of evaluated studies in detail. We then conducted a more in-depth analysis of findings of 89 empirical studies, rated either 2* (84 studies) or 3* (5 studies), using the tool in Appendix 5. These 89 studies collectively form the core evidence base on which this report draws. The characteristics presented in this report are based on this core evidence base. This practice involved two main tasks: (i) coding characteristics of school leadership, culture, climate, and structure; and (ii) commenting on evidence generation of studies that suggested these characteristics. *Coding* in (i) refers to the exercise of sorting 'data' (in our completed Excel file) to create meaning order and label the identified characteristics.

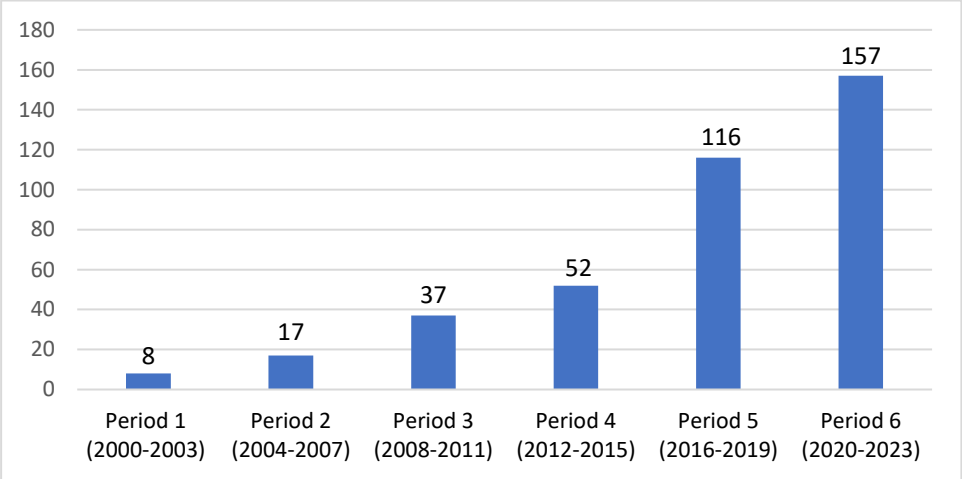
In addition, we considered teachers' NE from the list of included studies that mainly drew on qualitative data (e.g., interview data) and provided an analysis of teachers' experiences. Inclusion of teachers' NE was aimed at furthering elaboration of this review's key findings and/or at demonstrating the diversity of evidence sources.

To inform readers of the strength and diversity of evidence on each characteristic, we cited studies in the core evidence base with an indication of quality rating (e.g., Griffith, 2004[2*]), as shown in the section of findings. Where we cite a study of teachers' NE, there is no indication of quality rating (e.g., Brown and Wynn, 2007[NE]).

Overview of the evidence base

The current review shortlisted and evaluated 399 research outputs that meet all inclusion criteria and explicitly and centrally discuss the characteristics of school leadership, culture, climate, or structure to support teacher retention. This total number of 399 outputs comprises 387 outputs of empirical research and 12 of relevant reviews.

Figure 3. The number of empirical research outputs across review periods



These 387 empirical outputs are based on analyses of the data collected in more than 60 countries/nations, as displayed in the heat map (see Appendix 8). The top five countries in this list are: United States (120 studies; approx. 31%); China (25 studies; approx. 6.5%); Israel (20 studies, approx. 5.2%); Australia (18 studies, approx. 4.7%); and Malaysia (17 studies, approx. 4.7%). The United Kingdom has contributed 15 studies to this evidence base. The total number of countries reflects a global interest in the research on leadership for teacher retention.

We divided the review time frame, from January 2000 to May 2023, equally into six periods to observe any possible trends in the generation of empirical evidence on school leadership, culture, climate, and structure for teacher retention. As shown in Figure 3, there is a visible upward trend in the empirical research relevant to the topic of focus in this review.

As noted earlier, the core evidence base of this review comprises 89 empirical studies from more than 21 countries/nations. A group of 43 studies (approx. 50%) were undertaken in the United States. Only two studies (Sims, 2020; Shackleton et al., 2019) in this list were conducted exclusively in the United Kingdom. Of these two studies, Sims (2020) was based on an empirical study in England.

The current review suggests a growing interest in the process of evidence generation on leadership for teacher retention. It simultaneously highlights a great need for enhancing the quality of research on this important topic, as discussed later in this report.

Findings

This section presents findings in response to the three RQs of the current review. The lists of specific publications addressing each RQ are shown in Appendix 9.

School leadership to support teacher retention

RQ1. What school leadership characteristics support teacher retention?

We drew on a synthesis of evidence from a group of 45 relevant studies (see Appendix 9), rated either 2* or 3*, to respond to RQ1. The evidence base from these studies highlights three interrelated approaches and their associated practices that potentially support teacher retention. These approaches are labelled as follows:

- Approach 1. Prioritising teacher development.
- Approach 2. Building relational trust.
- Approach 3. Improving working conditions.

Approach 1. Prioritising teacher development

In this report, we define teacher development as activities to be intended to support teachers' development of professional competences. These competences include a broad range of professional knowledge and skills on, but not limited to, instructional practices, classroom management, assessment, lesson planning, and leadership. Leadership for teacher development attends to improve support and opportunities for teachers' professional growth. The approach of prioritising teacher growth and development involves the following domain of practices:

- providing instructional support;
- providing professional development opportunities; and
- cultivating leadership potential in teachers.

Providing instructional support

The reviewed studies evidence three practices or strategies that school leaders can enact to provide teachers with instructional support. Conducting classroom observation and offering constructive feedback on teachers' classroom and instruction tends to be cited as a positive strategy to develop teachers' sense of professional growth (Griffith, 2004[2*]; Kim, 2019[2*]; Kraft et al., 2016[3*]; Y. Liu et al., 2021[2*]). The feedback should be worded and delivered with the aim to encourage teachers to innovate their teaching (Boyd et al., 2011[2*]; Kim, 2019[2*]). Working collaboratively with teachers to address instructional challenges arising in schools is another practice of demonstrating support (Y. Liu et al., 2021[2*]).

The potential benefits of these practices in retaining teachers are evidenced in a group of cross-sectional studies (Kraft et al., 2016[3*]; Griffith, 2004[2*]; Kim, 2019[2*]; Y. Liu et al. 2021[2*]). These studies used administrative data from the United States and the TALIS[1] dataset to examine the relationships between: (i) instructional support for teachers; and (ii) teacher job satisfaction, efficacy, and turnover intentions. For example, Kim (2019[2*]) examined the relationship between early career teachers' (ECTs') perceptions of

[1] The Teaching and Learning International Survey (TALIS), developed by the Organisation for Economic Co-operation and Development (OECD).

principal leadership and their likelihood of turnover. Principal leadership in this study includes practices of maintaining discipline in the classroom, trusting teachers, consistency and appropriateness of teacher evaluation, and teachers' involvement in decision-making. The analysis used five years of data from a nationally representative dataset, the Beginning Teacher Longitudinal Survey in the United States. Using a discrete survival analysis, Kim (2019[2*]) showed that principal leadership had a consistent negative association with the odds of ECTs leaving their school during the first five years.

Internationally, Y. Liu et al. (2021[2*]) drew on an analysis of the 2013 TALIS dataset to examine the relationships between instructional leadership and teacher job satisfaction and self-efficacy. The sample included 104,358 teachers from 6,045 schools in 32 countries. Instructional leadership in this study included leadership practices focusing on supporting teachers' instruction such as *collaborating with teachers to solve classroom discipline issues*, *conducting classroom observations*, and *encouraging teachers to innovate their teaching*. Instructional leadership is indirectly associated with teacher job satisfaction through the effects of supportive school culture and teacher collaboration.

Providing professional development opportunities

Providing teachers with opportunities for and removing barriers to their professional development contributes to retaining teachers (e.g., Barbieri et al., 2019[2*]; Kraft et al., 2016[3*]; Ni, 2017[2*]). This practice is important in keeping teachers professionally engaged and motivated. In a cross-sectional study, Barbieri et al. (2019[2*]) analysed responses from 6,491 teachers in Italy and suggested that school leaders could support teachers' wellbeing and job satisfaction with providing professional development opportunities and educational resources for teachers.

Cultivating leadership potential in teachers

There is a link between cultivation of leadership in teachers and their job satisfaction and retention intentions. This strategy of *'cultivation of leadership'* involves giving teacher opportunities for authentic participation in decision-making processes to promote teacher voice and development of leadership potential. This link has been evidenced in a group of cross-sectional studies (e.g., Gouëdard et al., 2023[2*]; García Torres, 2018[2*]; Boyd et al., 2011[2*]). Gouëdard et al. (2023[2*]), for example, examined factors influencing teachers' job satisfaction, using a sample of 125,321 teachers from 44 OECD countries from the 2018 TALIS dataset. Their multiple regression analysis showed that the factor of growing leadership is particularly salient to teacher job satisfaction. Growing leadership in this study refers to providing teachers with opportunities to actively participate in school decisions. Similarly, Boyd et al. (2011[2*]) suggested 'involving teachers in making decisions' as one of the characteristics of effective school leadership in retaining teachers.

In summary, the evidence, mostly based on cross-sectional research in this review, highlights the approach of 'prioritising teacher development' as a potentially effective leadership approach to support teacher retention. The NE, drawing from analyses of teacher experiences in qualitative research across countries, corroborates this approach and its associated practices. This source of NE advocates for proactive leadership practices to promote professional development of ECTs (Brown and Wynn, 2007[NE]; Scallon et al., 2023[NE]; Chaaban and Du, 2017[NE]). Supportive practices include encouraging ECTs to experiment teaching innovations, leading or actively involving in developing solid mentoring programmes for ECTs, and sourcing for professional development opportunities for ECTs. These practices potentially contribute to enhanced professional wellbeing, resilience, and retention of ECTs (e.g., Brown and Wynn, 2007[NE]; Gunn and MaRae, 2021[NE]; Peters and Pearce, 2012[NE]; Lazcano et al., 2022[NE]; Chaaban and Du, 2017[NE]).

Approach 2. Building relational trust

This review identifies a relational trust between school leaders and teachers and between teachers as an important factor in informing teachers' retention intentions. It argues for the significance for school leaders in building trusting relationships to retain teachers. Teacher-principal trust potentially has positive

associations with teacher resilience (Li et al., 2019[2*]), teacher job satisfaction (Van Maele and Van Houtte, 2012[2*]), and teachers' turnover intentions (Tiplic et al., 2015[2*]). This trust may also mediate the relationships between principal leadership and teacher wellbeing (Liu et al., 2022[2*]).

Developing a relational trust requires school leadership efforts in *demonstrating individualised consideration for teachers* (e.g., Frahm and Cianca, 2021[NE]; Dumay and Galand, 2012[2*]), *treating teachers with respect* (e.g., Cann et al., 2021[NE]; Frahm and Cianca, 2021[NE]; Griffith, 2004[2*]), and *considering teacher voice* (e.g., Cann et al., 2021[NE]; Shuls and Flores, 2020[NE]; Griffith, 2004[2*]; Husny Arar and Massry-Herzllah, 2016[NE]; Massry-Herzallah and Arar, 2019[NE]).

The leadership approach of building relational trust and its supporting practices is mostly drawn from syntheses of findings of the reviewed studies on school transformational leadership in relation to teacher outcomes. Most of these studies (e.g., Dumay and Galand, 2012[2*]; Griffith, 2004[2*]) used the scale of Bass and Avolio (1997) to measure three dimensions: inspiration or charisma; individualised consideration; and intellectual stimulation.

Dumay and Galand (2012[2*]) reported positive effects of transformational leadership on teacher commitment to stay. Using stratified sampling, the authors identified 660 teachers within 50 primary French-speaking Belgian schools, to test the influence of the school principal's transformational leadership (as an organisational-level construct) on teacher commitment to school. Results of multilevel analyses, the school level showed a small positive effect of transformational leadership on teacher organisational commitment, although it suggests that schools have a limited impact on teacher commitment. Similarly, Griffith (2004[2*]) found that the relationship between transformational leadership and teacher turnover is indirect via job satisfaction. The study used survey data from elementary school staff and students, and school-aggregated student achievement test scores obtained from school archives, in the United States. The sample included 3,291 teachers, with a relatively low response rate of 39%. Griffith (2004[2*]) highlighted treating teachers with respect and considering their suggestions as two positive leadership practices for retaining teachers in schools.

To support teacher professional wellbeing and job satisfaction, a range of evidence from this review advocates for compassionate leadership characterised as being *caring*, *encouraging*, and *listening* (Ni, 2017[2*]; Olsen and Huang, 2019[2*]; Roch and Sai, 2017[2*]). The study by Cezmi and Toprak (2014[2*]) is an example to evidence the importance of building a relational trust with teachers to increase their commitment. Cezmi and Toprak (2014[2*]) examined the relationship between leadership behaviours and teacher commitment, using a sample of 1,469 primary teachers in Turkey. The study suggested that school leadership behaviours can influence teacher commitment through promoting a positive school climate. Fair and supportive leadership that nurtures mutual relational trust helps to improve the school climate positively.

Approach 3. Improving working conditions

The evidence base underscores the significance of improving working conditions in schools to support teacher retention (e.g., Cha and Cohen-Vogel, 2011[2*]; Redding and Nguyen, 2020[3*]; Boyd et al., 2011[2*]; Dupriez et al., 2016[2*]). Working conditions in schools refer to a variety of physical, organisational, sociological, political, cultural, psychological, and educational features of teachers' jobs (Johnson, 2006). Synthesising the findings of these relevant studies allowed us to identify and categorise a range of school leadership practices, or strategies associated with the approach of improving working conditions for teachers in schools. These include:

- supporting teacher professional autonomy;
- promoting collegiality in schools;
- developing an equitable support and recognition system;

- establishing an effective communication structure; and
- supporting teachers with student disciplinary matters.

Supporting teacher professional autonomy

Teachers' sense of professional autonomy is linked with the two proximal outcomes of teacher retention, namely teacher job satisfaction and wellbeing. These associations are exemplified in empirical research (e.g., Pan et al., 2023[2*]; Van Droogenbroek et al., 2014[2*]) across countries, as presented below.

Analysing the 2013 TALIS dataset collected in Australia and England, Collie et al. (2020[2*]) documented autonomy-supportive leadership as a critical factor in influencing teacher wellbeing and job satisfaction. Autonomy-supportive leadership refers to granting teachers necessary professional freedom and control on their delivery of tasks and considering teacher voice in school policy decisions. On the contrary, controlling leadership practices would lower teacher's sense of job satisfaction. Controlling leadership focuses on critiquing teachers on their lesson planning and teaching in professional conversations and disrespecting teacher classroom autonomy (Gamero Burón and Lassibille, 2016[2*], conducted in Madagascar).

Van Droogenbroek et al. (2014[2*]) argued for the importance of enhancing teacher autonomy in lessening dissatisfaction with non-teaching-related workload such as paperwork and accountability demands. This argument is based on an analysis of the responses of 1,878 senior teachers aged from 45 to 65 in Belgium. Van Droogenbroek et al. (2014[2*]) suggested school leaders supporting greater teacher autonomy and involving teacher voice in school policy decisions.

Two other studies, drawing on the 2018 TALIS dataset of Chinese schools (S. Liu et al., 2021[2*]) and Taiwanese schools (Pan et al., 2023[2*]), suggested the positive relationships between teachers' perceived autonomy and their wellbeing and job satisfaction. S. Liu et al. (2021[2*]) highlighted the indirect associations between school leadership and teacher job satisfaction through teacher autonomy and professional collaboration were statistically significant. Pan et al. (2023[2*]) suggested teachers' perceived autonomy was indirectly related to wellbeing through the teaching workload.

Promoting collegiality in schools

Alongside teacher professional autonomy, healthy collegiality in schools would potentially contribute to enhancing teacher job satisfaction. Collegiality emphasises the organisational features of inclusive participation in decision-making, shared power and responsibility, reciprocal support, mutual trust, and cooperation. The current review found a variety of evidence on positive links between collegiality in schools and teacher wellbeing and teacher retention intentions (e.g., Collie et al., 2020[2*]; Dworkin et al., 2003[2*]; Roch and Sai, 2017[2*]).

Studies relevant to collegial leadership provide promising evidence on the importance of promoting collegiality in satisfying and retaining teachers (e.g., Boyd et al., 2011[2*]; Da'as, 2021[3*]; Dworkin et al., 2003[2*]; Geiger and Pivovarova, 2018[2*]; Hulpia et al., 2009[2*]; Kouhsari et al., 2022[2*]). Dworkin et al. (2003[2*]) identified democratic leadership, defined as *collegial*, *supportive*, and *consultative* in decision-making as a contributory factor in reducing teacher burnout. This was a district-wide survey of all teachers in Houston, United States. The sample included 2,961 urban public schoolteachers (82% response rate). The analysis, by Kouhsari et al. (2022[2*]), of the 2018 TALIS dataset collected in five countries (Canada, China, Finland, Japan, and Singapore) suggested an association between involving teachers genuinely in the process of schoolwide decision-making and teacher professional wellbeing.

Developing an equitable support and recognition system

Developing an equitable support system that provides fair access to the available sources of support to perform their job is a critical part of leadership for teacher retention (e.g., Hulpia et al., 2009[2*]; García Torres, 2018[2*]).

Based on an analysis of the 2013 TALIS dataset, García Torres (2018[2*]) implied that fair distribution and quality of support for teachers in schools have a positive relationship with their job satisfaction. This implication is reinforced by Hulpia et al. (2009[2*]). Hulpia et al. (2009[2*]) examined the effects of school leadership, cooperative leadership team, and participative decision-making on teachers' organisational commitment. Data on leadership characteristics and teachers' organisational commitment were collected from a Likert-scale survey of 1,522 (with a response rate of 64%) secondary teachers in Belgium. Hulpia et al (2009[2*]) suggested that equal distribution of support among the leadership team could promote teachers' organisational commitment. However, it should be noted that data was based on large secondary schools and their findings may not apply to small primary schools.

Equally importantly, the evidence (e.g., Arthur and Bradley, 2023[NE]; Griffith, 2004[2*]; Player et al., 2017[2*]; Price and Weatherby, 2018[2*]) recommends that school leaders should develop a fair reward system that recognises teachers' efforts and contributions—such a system is an important source of professional motivation. The characteristics of such a system is discussed further in our response to RQ2.

Establishing an effective communication structure

The current review identified evidence (Player et al., 2017[2*]; Kraft et al., 2016[3*]; Torres, 2016[NE]) suggesting the significance of establishing an effective communication structure to promote teachers' sense of autonomy and control of information. This perceived control of their job is potentially related to employees' wellbeing and retention.

Player et al. (2017[2*]) utilised data from around 3,000 teachers from the 2011–2012 Schools and Staffing Survey (SASS) and the 2012–2013 Teacher Follow-up Survey (TFS), the authors explored the relationship between leadership and person-job (P-J) fit and teacher mobility. The results indicated that teachers who reported positive school leadership were less likely than those who reported weaker leadership to move school, but leadership quality did not predict teachers' likelihood of leaving the profession. Teachers' person-vocation (P-V) fit were better predictors of teachers' retention in the profession. Principal leadership was based on five characteristics: supportive and encouraging, recognise good work, enforce rules, give disciplinary support, and communicate school vision to teachers.

Kraft et al. (2016[3*]) analysed data from the 2008–2012 New York City (NYC) Department of Education School Survey (school contexts), NYC human resources data (teacher turnover and teacher covariates), NYC student assessment data (student-level covariates), and NYC school administrative data (school-level covariates) to examine the relationship between teachers' perceptions of their working conditions and intended and actual departures. Among the organisational factors, leadership practices, such as *communicating a clear vision and encouraging open communication on important school issues*, are potentially effective in retaining teachers. On the contrary, principals' implicit expectations for teachers might adversely affect teacher-principal relationships, and this issue could challenge teacher retention (Torres, 2016[NE]).

Supporting teachers with student disciplinary matters

The issues of school discipline or student behaviours matter in influencing teacher job satisfaction and turnover intensions (e.g., Casely-Hayford et al., 2023[2*]; Kraft et al., 2016[3*]; Toropova et al., 2021[2*]; Kukla-Acevedo, 2009[2*]). A group of studies (Ladd, 2011[2*]; Player et al., 2017[2*]; Kim, 2019[2*]; Kraft et al., 2016[3*]) in the United States suggested that supporting teachers, especially ECTs, with management skills of

student behaviours and enforcement of school rules would contribute to a compound of factors to motivate and retain teachers.

To sum up, the current section has presented evidence on the practices or strategies that school leaders can enact to support teacher retention. These practices pertain to, but are not limited to, building a culture of collegiality, promoting a favourable climate of school discipline, and developing an equitable structure of workload and support. Building a positive school culture, climate, and structure benefits from collective efforts of all school members. The next section discusses evidence-informed characteristics of school culture, climate, and structure that support teacher retention.

School culture, climate, and structure to support teacher retention

RQ2. What characteristics of school culture, climate, and structure support teacher retention?

These characteristics identified in this review were based on a synthesis of the evidence from a group of 33 relevant studies (see Appendix 9). The evidence base suggests four prominent characteristics of school culture, climate, and structure that potentially support teacher retention. These are:

- a culture of collegiality;
- a positive climate of school discipline;
- a climate of intellectual stimulation; and
- an equitable structure of workload and support distribution.

A culture of collegiality

A culture of collegiality in schools is characterised as trusting relationships, respect, mutual support, and compassionate leadership. This collegial culture promotes professional collaboration and a sense of shared decision-making and responsibility. The evidence base highlights a collegial culture as a prominent factor in influencing teachers' professional wellbeing and turnover intentions (e.g., Boyd et al., 2011[2*]; Grant and Brantlinger, 2022[2*]; Olsen and Huang, 2019[2*]; Pyhältö et al., 2015[2*]). A variety of NE drawn from teacher interviews echoes the benefits of collegiality in supporting teacher wellbeing and retention (e.g., Arthur and Bradley, 2023[NE]; Brady and Wilson, 2021[NE]; Haschet et al., 2021[NE]; Hobson and Maxell, 2017[NE]; Tran and Dou, 2019[NE]).

A group of studies (e.g., Grant and Brantlinger, 2022[2*]; Redding and Nguyen, 2020[3*]; Campoli and Conrad-Popova, 2017[2*]) in the United States evidenced the relationships between *a culture of collegiality* in schools and *teacher turnover retentions*. Grant and Brantlinger (2022[2*]) reported findings from a longitudinal study that utilised survey and retention data of 608 teachers of secondary mathematics in New York, United States. Their findings identified *teacher collegiality* as an important factor in influencing ECTs' turnover. Redding and Nguyen (2020[3*]) similarly suggested a link between teacher collegiality and teacher turnover. Campoli and Conrad-Popova (2017[2*]) analysed data from a nationally representative sample of over 1,000 Black female teachers who participated in the 2007–2008 SASS. Using multinomial logistic regression analysis, the authors found that the administration and school leadership factors were important in teachers' retention decisions, not only for the first-year teachers but also for all teachers in the sample and the teachers who left teaching after 2004–2005. Controlling for working conditions, administrative support was not related to Black female teachers' decision to move. Teachers who perceived *a stronger culture of collegiality* were less likely to move from their school and more likely to stay another year. Teachers who rated autonomy in decision-making were less likely to move and more likely to stay.

Studies (Olsen and Huang, 2019[2*]; Pyhältö et al., 2015[2*]; Roch and Sai, 2017[2*]; Toropova et al., 2021[2*]; You et al., 2017[2*]) suggested the association between teacher collegial collaboration and their sense of professional wellbeing and job satisfaction. A culture of healthy collegiality could act as a potential inhibitor of teacher exhaustion (Pyhältö et al., 2015[2*]).

On the contrary, *a culture of excessive competitiveness* and *rigid hierarchy* could be harmful to collective teacher efficacy and teacher wellbeing (Lim and Eo, 2014[2*]). Lim and Eo (2014[2*]) examined the relationship between school organisational climate, collective teacher efficacy, and burnout in a sample of 367 Korean middle school teachers. Data came from a part of the larger dataset of Kangwon Education Longitudinal Study (KELS). School organisational climate characterised by higher levels of reflective dialogue was associated with both higher levels of collective teacher efficacy and lower levels of teacher burnout.

Pyhältö et al. (2015[2*]) explored the interrelation between the teacher-working environment fit, bullying, experienced exhaustion, and turnover intentions. The aim of the study was to gain insight into the dynamics that contribute to teacher bullying, exhaustion, and turnover. A total of 2,310 comprehensive schoolteachers in Finland completed the professional agency survey. Structural equation modelling (SEM) results showed that a supportive work environment for teachers—characterised by *collegiality*, a positive professional climate, and the capacity to resolve conflicts in a constructive manner—can act as a deterrent to both teacher-targeted bullying and exhaustion, and hence *turnover*.

A positive climate of school discipline

Disciplinary climate refers to the extent to which the disciplinary rules of schools and classrooms are consistently respected and complied. A positive school climate has characteristics of an orderly, respectful, collaborative learning environment while an unfavourable climate is defined by disruptive behaviours, bullying, and aggression.

This review identified a range of evidence (e.g., Grant and Brantlinger, 2022[2*]; Kukla-Acevedo, 2009[2*]; Toropova et al., 2021[2*]; Casely-Hayford et al., 2023[2*]; Redding and Nguyen, 2020[3*]; Cha and Cohen-Vogel, 2011[2*]) supporting the link between a positive *disciplinary climate and teacher job satisfaction* and *turnover*.

In their analysis of the United States SASS, Farinde-Wu and Fitchett (2018[2*]) found that favourable student behaviours could contribute to Black female teachers' job satisfaction. By contrast, a number of studies showed a link between unfavourable *student behaviours* and teachers' decreased satisfaction and increased turnover (e.g., Berg and Cornell, 2016[2*]; Dicke et al., 2020[2*]; Li et al., 2021[2*]; Pan et al., 2023[2*]; Sass et al., 2011[2*]; Shackleton et al., 2019[2*]).

Kukla-Acevedo (2009[2*]) examined whether three workplace conditions were related to teacher mobility decisions in the United States. The aim of the study was to estimate the effect of administrative support, classroom management, and *behavioural climate* on teachers' *decisions to leave* the profession or *move to another school*. The author conducted an analysis of data from the 1999–2000 SASS and the 2000–2001 TFS. Of 3,505 TFS respondents, 5% left teaching, 8% switched schools, and 87% stayed in the same school. Therefore, a large amount of the turnover was due to teachers' transfer to other schools, rather than their exit from the profession. The results indicated that two of the three workplace conditions: *behavioural climate;* and administrative support, were strongly related to the mobility decisions of first-year teachers, while experienced teachers were not strongly influenced by workplace conditions.

A climate of intellectual stimulation

An intellectually stimulating climate is characterised by innovativeness, collaborative learning, and professional engagement. A climate of intellectual stimulation fosters experimentation of innovative ideas, critical thinking, problem solving, and self-fulfilment. The evidence to justify this practice is mostly drawn from correlational studies on the associations between transformational leadership, school organisational climate or environment, and professional development for teachers (e.g., S. Liu et al., 2023**[2*]**; You et al.,

2017[2*]) and interview studies (e.g., Ashiedu and Scott-Ladd, 2012[NE]; Gilbert, 2011[NE]; Wynn and Brown, 2008[NE]).

You et al. (2017[2*]) examined how individual characteristics (e.g., gender and teaching experience) and contextual characteristics (e.g., principal leadership and collegial support) influenced Korean secondary school teachers' perceived job satisfaction. The study was based on an analysis of data from KELS 2005 that had a nationally representative sample of 2,908 teachers from 150 middle schools. Their findings imply an academic climate of intellectual stimulation as a significant factor influencing teacher job satisfaction. Similarly, Lim and Eo (2014[2*]) found a relationship between school climate and teachers' burnout through collective teacher efficacy. One key aspect of the school climate in this study is reflective dialogue—the process by which teachers engage in in-depth conversations about teaching and learning.

A range of NE from studies across countries highlights the importance of promoting an intellectually stimulating work climate in satisfying and retaining teachers in schools. These studies were conducted in Australia (Ashiedu and Scott-Ladd's, 2012[NE]), Chile (Hean and Garrett, 2001[NE]), and China (B. Feng, 2007[2*]; Kwong et al., 2010[NE]).

An equitable structure of workload and support distribution

The current review suggests that an equitable structure of workload and support distribution is important in enhancing teacher job satisfaction and professional wellbeing. Equitable support for teachers can be operationalised as equal access to professional development opportunities, fair access to resources, fair recognition of contributions and achievements, and inclusive and transparent decision-making process of school policies. A range of studies (e.g., Casely-Hayford et al., 2023[2*]; Heffernan et al., 2022[2*]; Toropova et al., 2021[2*]) evidenced workload as a noticeable factor influencing teacher professional wellbeing.

Analysing the 2018 TALIS dataset, Kouhsari et al. (2022[2*]) found that excessive workload significantly and negatively influenced teacher professional wellbeing in Canada, China, Finland, Japan, and Singapore. To advance an understanding of reasons for former teachers' exit from the teaching profession in Belgium, Amitai and Van Houtte (2022[NE]) found that job demands were a key factor in secondary school teachers' decision to leave their teaching job. ECTs, in particular, attributed their decision to quit teaching to *high workload* and *job insecurity*, mostly when they did not feel fully prepared for the reality of the classroom and in dealing with more challenging situations. Issues with classroom management often led to these teachers feeling demoralised. The more experienced teachers were mostly concerned with their profession's flat career structure, which they perceived as offering limited opportunities for job diversification and 'vertical' promotion. This perceived limitation restrained the teachers' ambition to explore and pursue new challenges.

Based on a secondary analysis of data from the TALIS dataset, Casely-Hayford et al. (2023[2*]) used hierarchical linear regression to examine the relationship between job demands and resources (including a personal resource of self-efficacy beliefs) and teacher job satisfaction in five European countries: Austria, Estonia, Malta, Slovenia, and Sweden. The sample consists of 17,570 teachers from 3,089 schools. Teachers' perceptions of *workload stress* are the strongest predictor of teacher job dissatisfaction in all countries except Sweden. The strongest negative relationship between workload stress and teacher job satisfaction is observed among teachers in Slovenia and Estonia.

Analysing the responses from 2,444 Australian primary and secondary school teachers, Heffernan et al. (2022[2*]) found that only 41% of respondents intend to remain in the profession. Heavy workload, concerns about professional wellbeing, and the status of the profession were the main reasons to influence their intention to leave. Van Droogenbroeck and Spruyt (2014[2*]), analysing more than 3,000 teachers in Belgium, as part of an end of career survey, suggested that it is the non-teaching workload that negatively impacts on teachers most; as well as lesson planning and marking (Jerrim and Sims, 2021[2*]).

An amount of NE similarly emphasises 'excessive workload' as a critical factor in influencing teacher professional wellbeing and turnover. This source of evidence is based on empirical research across countries, for example, Belgium (Amitai and Van Houtte, 2022[NE]), England (Brady and Wilson, 2022[NE]; Cooper-Gibson Research, 2018[NE]), Australia (Buchanan, 2009[NE]), and Switzerland (Hascher et al., 2021[NE]). The negative aspects of a heavy workload are compounded by teaching intensity, stress, difficult working conditions and clashes among school staff, restricted flexibility, and lack of control in the workplace (Buchanan, 2009[NE]; Ebadijalal and Moradkhani, 2022[NE]; Gilbert, 2011[NE]; Richards et al., 2018[NE]).

In summary, these sources of evidence suggest, feasible workload that is equitably distributed and supported with adequate resources is linked with teacher retention. Excessive workload is related to emotional exhaustion and motivation to quit teaching. Teachers would need support to manage their workload demands.

The evidence suggests that an equitable structure of support distribution is likely to enhance teachers' job satisfaction and organisational commitment (Boyd et al., 2011[2*]; Hulpia et al., 2009[2*]; Pyhältö et al., 2015[2*]; García Torres, 2019[2*]). Equitable support for teachers can be operationalised as equal access to professional development opportunities, equal access to resources, fair recognition of contributions and achievements, and inclusive decision-making process of school policies (e.g., Cha and Cohen-Vogel, 2011[2*]; Pyhältö et al., 2015[2*]).

Leadership, culture, climate, and structure for teacher retention in disadvantaged schools

RQ3. What characteristics of school leadership, culture, climate, and structure support teacher retention in disadvantaged schools?

To respond to this question, we drew on an analysis of evidence from two groups of research outputs. The first group comprises eleven publications focused centrally on the relevant issues of teacher retention in disadvantaged schools (e.g., Grissom, 2011[2*]; Ingersoll and May, 2011[2*]; Jacob et al. 2015[3*]). The second group of nine, included publications that do not focus on, but have at least one finding related to, teacher retention in disadvantaged schools (e.g., Bartanen et al., 2019[2*]; Nguyen, 2021[2*]; Pietsch et al., 2019[2*]). The full list of these 20 research outputs is presented in Appendix 9. All these outputs were based on the data from the United States, except for Pietsch et al. (2019[2*]) in Germany.

The analysis of these research outputs suggests that the potential characteristics of school leadership, culture, climate, and structure found in schools in general are applicable to disadvantaged schools. Five prominent themes emerged from a cross-synthesis of findings from these two groups of research outputs.

First, *school leadership matters significantly in motivating and retaining teachers to work in disadvantaged schools* (Grissom, 2011[2*]; Ladd, 2011[2*]; Ni, 2017[2*]; Nguyen, 2021[2*]; Roch and Sai, 2017[2*]). Ladd (2011[2*]), for example, provided clear evidence. The author analysed the North Carolina surveys of school climate for 2006 and 2008 in the United States. School leadership emerged to be the most consistent measure of working conditions, which in turn influenced teacher turnover intentions. The school leadership practices in this study included trusting teachers and involving teachers in decision-making. As teachers who indicated intention to leave school are more likely to rate school conditions negatively, Ladd (2011[2*]) averaged the responses about working conditions across all teachers within each school, as well as weighting the regressions by the number of responses to mitigate the common source bias. This study concluded that the quality of school leadership is the 'dominant factor' in informing teachers' departure decisions in hard-to-staff schools.

In another study, Grissom (2011[2*]) drew on national data from the 2003–2004 SASS and the 2004–2005 TFS to examine whether effective leaders are effective to retaining teachers in disadvantaged schools.

Measures of effective school leadership included: setting clear expectations, providing support and encouragement, and recognising staff for a job well done. The SASS dataset covers a nationally representative sample of schools and include 30,690 teachers in 6,290 schools. Regression results showed that principal effectiveness is associated with greater teacher satisfaction and a lower probability of teachers leaving the school within a year. These potential effects are even greater in disadvantaged schools.

Second, *improving working conditions is critical in satisfying and retaining teachers in disadvantaged schools, in addition to financial incentives*. The working conditions discussed in the two previous research questions are critical to teacher retention in disadvantaged schools. Positive working conditions to support teacher retention in disadvantaged schools include supportive and effective school leadership, quality professional development, equitable support structure, healthy collegiality, and positive school discipline (e.g., Geiger and Pivovarova, 2018[2*]; Ni, 2017[2*]; Redding and Nguyen, 2020[3*]; Roch and Sai, 2018[2*]; Roch and Sai, 2017[2*]).

Third, *among these working conditions*, *the evidence underscores the importance of effective school leadership to promote a climate of positive school discipline* (Farinde-Wu and Fitchett, 2018[2*]; Kim, 2019[2*]; Roch and Sai, 2017[2*]; Roch and Sai, 2018[2*]), especially in schools that tend to have more disciplinary issues such as disrespect, bullying, and aggression. These issues would cost teachers' emotional labour, which logically negates teacher professional wellbeing.

Fourth, *the probability of ECTs leaving disadvantaged schools or teaching profession is concerning* (Redding and Nguyen, 2020[3*]; Sass et al., 2012[2*]; Kim, 2019[2*]). Drawing on nationally representative data from the SASS from the 1987–1988 to 2011–2012 school years in the United States, Redding and Nguyen (2020[3*]) investigated the extent to which the characteristics of beginning teachers, the schools in which they teach, and their turnover rates have changed over time. The overall sample size is more than 264,000 observations. The sample size with turnover data is 145,780 observations, with 8,200 observations for beginning teachers. Their analyses showed that ECTs are more likely to leave schools with a high concentration of disadvantaged and ethnic minority students. Kim (2019[2*]) concluded: 'the first three years of the teaching career was critical for teacher leaving the profession'. Grissom (2011[2*]) therefore called for more effective policies to recruit the 'best principals' into the most challenging schools to lower 'perpetually higher' teacher turnover rates in those schools.

Fifth, *principal-teacher demographic matching can be a contributory factor influencing teachers' turnover decisions* (Bartanen et al., 2019[2*]; Lindsay and Egalite, 2020[2*]; Nguyen, 2021[2*]). In other words, principal-teacher gender and race/ethnicity congruence matter in retaining teachers in a school. Based on an analysis of state-wide administrative data of North Carolina in the United States, Lindsay and Egalite (2020[2*]) found that that being race-matched with a principal could result in lower rates of teacher turnover. These potential effects are larger for teachers of colour, compared to white teachers. A similar finding is found in the other two studies of Bartanen et al. (2019[2*]) and Nguyen (2021[2*]) in the United States. While these findings are interesting, cautious consideration is needed in advocating principal-teacher demographic matching in other contexts, given its possible countereffects in promoting social inclusion.

Implications and recommendations from the review

The review has identified the evidence-informed characteristics of school leadership, culture, climate, and structure to support teacher retention. Before summarising these potential characteristics and the review's implications and recommendations, it is important to discuss some gaps in the current evidence base. This discussion has a dual purpose: first, to transparently inform readers of the strengths of this review's findings; and second, to offer implications for future research.

Gaps in the evidence base

While the current evidence base has some strengths, there are major methodological challenges that should be addressed to advance the evidence base to inform, more effectively, policy and practice on teacher retention.

Challenges of operationalising and measuring effective leadership. The construct of 'principal effectiveness' or 'effective school leadership' for teacher retention is loosely operationalised. Many theoretical dimensions of school leadership tend to be overlapped, which challenges precise conclusions on which characteristics (approaches and practices) are most salient in retaining teachers.

Measurement of principal effectiveness in many reviewed studies suffers from biases. This methodological issue is attributable to a heavy reliance on teacher responses to operationalise and measure principal effectiveness. Teacher perceptions can only capture some aspects of school leadership. To move forward, *a more integrative consideration of multiple perspectives from teachers, students, parents, school leaders themselves, and inspectors might address this issue*.

Inconsistency in positioning organisational factors in theoretical models. While 'working conditions' in most studies are conceptualised as a predictor, they are considered a dimension of job satisfaction in the others. For example, Razavipour and Yousefi (2017[1*]) conceptualised working conditions, pay, promotion opportunities, and collegial relations as dimensions of job satisfaction. Correlating these variables with organisational climate is likely to show strong correlations because the same construct is measured. Such positively correlated errors will yield positively biased estimates and exaggerated effects (*see* Favero and Bullock, 2014). *Increased specificity and more nuanced operationalisation on concepts are needed in future research*.

Insufficient consideration in controlling potential factors. Many studies that specifically analysed models of types of school leadership are correlational in nature and based on a small sample (e.g., with 200–300 self-selected teacher participants in a big geographical area). Most of these studies tend to focus on leadership styles or models and rarely accounted for other potential factors that could have explained the results.

This limitation is exacerbated by an over-reliance on cross-sectional data. These data fail to account for changes in other potential influencing factors happening at the time of the data collection. For example, changes in education reforms, increased accountability pressure on principals and teachers, and changing patterns of segregation among student bodies and teacher workforces may have implications for the relationships among teachers, students, and school leaders. These external factors may have an effect on teachers' job satisfaction and retention intention. *The current issues underscore a need for future research to consider potential factors in analytical procedures*.

Issues with measures used in larger-scale studies. These studies mostly utilised administrative data from the OECD or the United States. While the larger-scale studies tend to be rated higher in quality of evidence, we identified two notable issues. First, most of these studies used data on teacher intent to stay/leave, rather than actual departure. Second, some studies utilised the data on teachers' actual departures as an outcome variable, but they employed subjective measurements of independent variables. This methodological issue weakened those studies. *To support more nuanced conclusions with stronger confidence, the increased use of objective measurements is a necessary next step*.

Issues with analytical strategies. In a majority of reviewed studies, teacher and school leaders are non-randomly sorted to schools. However, many of these simply compared descriptive differences in teacher retention, and job satisfaction among different combinations of teacher and principal characteristics. This analytical strategy might conflate any causal effects of principal characteristics with other factors, such as the working conditions in the school. Teachers who are inherently more likely to leave may be systematically assigned to certain types of schools (e.g., more challenging schools). For example, Bartanen et al. (2019[3*]) found that teachers are more likely to give higher ratings to school leadership, school climate, and their

own satisfaction if they have a race-congruent principal. *More robust and well-justified analytical strategies would enhance precision of results and conclusions*.

Summary of findings

This current review affirms the importance of leadership and organisational factors in motivating and retaining teachers in schools. This affirmation corresponds with the previous reviews on teacher attrition, mobility, job satisfaction, and burnout (e.g., Boyce and Bowers, 2018; Brunsting et al., 2014; Nguyen et al., 2019; See et al., 2020).

Appendix 10 presents a summary of 12 previous, relevant reviews. The scope, focus, and approach of the current review are different from but complementary of these previous reviews. These reviews centred on teacher wellbeing, teacher mobility, and teacher attrition but without a clear focus on the characteristics of school leadership, culture, climate, and structure for teacher retention.

The homogeneity on the (promising) characteristics of school leadership, culture, climate, and structure to support teacher retention and proximal teacher outcomes is relatively evident, as reflected across the evidence base of the current review and in consideration with the previous relevant reviews. The previous reviews evidenced the associations between: (i) *principal leadership;* and (ii) *teacher retention rates* (Boyce and Bowers, 2018), *teacher job satisfaction* (Boyce and Bowers, 2018; Chin, 2007), *teacher wellbeing* (Liebowitz and Porter, 2019), and *teacher burnout* (Brunsting et al., 2014). They also identified some links between organisational factors and teacher retention and related teacher outcomes. These organisational factors include school climate (Boyce and Bowers, 2018), workload (Billingsley and Bettini, 2019; Palma-Vasquez et al., 2022), role clarity/ambiguity (Brusnting et al., 2014), student disciplinary issues (Nguyen et al., 2019), and precarious working environment (Palma-Vasquez et al., 2022).

To move forward, the findings from the current review have enhanced both the coverage and specificity of leadership and organisational factors in relation to teacher retention. They also add evidence to empirically unpack the theoretical perspectives of factors at the microsystem influencing teacher retention as presented earlier (see Figure 1). This review has categorically provided an evidence-informed typology of characteristics of school leadership, culture, climate, and structure to support teacher retention. The typology comprises:

- three interrelated leadership approaches and their associated practices—*prioritising teacher development*, *building relational trust*, and *improving working conditions*; and
- characteristics of school culture, climate, and structure—*a culture of collegiality*, *a positive climate of school discipline*, *a climate of intellectual stimulation*, and *an equitable structure of workload and support distribution*.

The current review's typology of characteristics is an important step in framing future research focusing on leadership for teacher retention. It highlights a range of evidence-based practices that school leaders can employ to enhance teachers' job resources. The promising practices include:

- providing teachers with instructional support;
- offering professional development opportunities for teachers;
- cultivating leadership potential in teachers;
- demonstrating individualised consideration for teachers;
- treating teachers with respect;

- considering teacher voice;
- supporting teacher professional autonomy;
- promoting collegiality in schools;
- developing an equitable support and recognition system;
- establishing an effective communication structure;
- attending to developing a positive climate of school discipline; and
- promoting a climate of intellectual stimulation.

Enhancing their job resources is vital in supporting teachers to cope with the job demands, especially in the contexts where school leaders have limited influence on the intensity of teacher workload and on the unique challenges of disadvantaged schools. Synthesis of findings from this review also suggests an assumption that enhancing teachers' job resources can support development of their personal capital, for example, their professional efficacy and resilience (Gouëdard et al., 2023[2*]; Lim and Eo, 2014[2*]; Li et al., 2019[2*]) to mitigate the misfit between job demands and job resources. However, this assumption is subject to further verification in future robust empirical research.

As further discussed below, this rapid review was not designed to rank the degree of salience of leadership approaches and practices. However, we wish to argue that supporting teacher retention requires a contextualised combination of effective approaches and practices. An effective enactment of a(n) approach/practice may positively impact the other approaches/practices. This argument is based on the widely accepted belief that leadership is highly contextualised.

Recommendations for the Education Endowment Foundation (EEF) commissioning agenda

The current evidence base, in consideration of the English context, enables us to make the following key recommendations to support teacher retention, especially in disadvantaged schools.

Recommendation 1: Supporting school leaders with implementation of potential approaches and practices through a robust Continuing Professional Development (CPD) programme

Many potential approaches and practices of school leadership, culture, climate, and structure identified in this review appear to be common-sense. However, there are a multiplicity of challenges in implementing these approaches and practices effectively to maximise their potential impacts on teacher retention. For example, the impact of teacher evaluation on classroom instruction on teacher job satisfaction is subject to school leaders' actual methods of individualised feedback delivery to teachers.

Some of these challenges for school leaders (headteachers and deputy headteachers):

- contextualising effectively the implementation of these approaches and practices in their schools and national contexts;
- addressing competing (contextual) demands they face in applying a combination of these approaches and practices; and
- evaluating the effects of these approaches and practices to inform any necessary adjustments.

School leaders need support to address these challenges. This support of professional development is particularly critical if the claim on the difficulty in recruiting more experienced and effective school leaders to disadvantaged schools is valid. On this basis, we recommend designing and delivering a CPD programme (6–12 months) that incorporate elements of coaching and mentoring to support school leaders, especially those in disadvantaged schools, with implementation of potential leadership approaches and practices for teacher retention.

Recommendation 2: Piloting implementation of creative workload configurations in disadvantaged schools

It is clear from this review that workload is a significant factor influencing teacher professional wellbeing and retention intentions. Teacher perceptions of arduous and excessive workload would adversely affect their wellbeing and job satisfaction. While consideration of workload reduction is a necessary step, school leaders' purview of influence on the intensity of teacher workload may be limited in the countries that requires compliance with a national workload framework. However, it is evident that school leaders can influence contextualised configurations of workload in their schools.

Interpretation of evidence across studies in this review suggests some characteristics of a contextually sensitive configuration to support teacher retention in disadvantaged schools, as summarised below:

- a consideration of reduced classroom teaching time and more devoted time on lesson planning, interactions with students and their families, and professional development activities within the core workload structure;
- a consideration of extra time support on professional development activities for ECTs; and
- underpinned by a contextualised and equitable process that considers teacher needs and is transparently communicated—this would likely help to enhance teachers' sense of agency, autonomy, and fairness in managing their own workload.

Schools would probably benefit from a robust framework to guide them on the strategies to configure a workload model tailored to their schools. Development of this framework can draw on the findings of the current review, the EEF commissioned practical review on workload in England, the guidance on school workload reduction toolkit issued by the Department for Education in England (see this link), and the robust literature on employee retention and organisational management across sectors.

Recommendation 3: Commissioning longitudinal and experimental studies

To measure the impacts of the afore-suggested interventions, we recommend robust design and delivery of experimental studies. For example, randomised controlled studies with pre-post measures of school leaders' practices and teachers' assessment of their school leaders before and after a leadership development programme to develop their leadership practices for teacher retention.

It would also be beneficial to commission collection and analyses of longitudinal data linking teachers to principals as they change schools would allow for analysis of how the same teachers respond to principals with different characteristics, background, and skill sets. Or, tracking teachers as they move schools and experience different principals and working environments, may be an alternative. These analyses would advance an understanding on the effects of school leadership practices and mechanisms to support teacher retention.

Limitations of the review

It is important to discuss some limitations of the current review in the light of the given time and resources for a rapid review and the quality of reviewed studies.

First, it is important to note the issues of time and language of the review and the geographical coverage of the identified evidence base. This rapid evidence assessment focused on relevant studies published from 2000 to May 2023. As noted earlier, we prioritised consideration of more contemporary evidence, within a limited time for this review. Nevertheless, we engaged our discussion of findings with the previous reviews (e.g., Boyce and Bowers, 2018; Brunsting et al., 2014; Scheopner, 2010) that included studies published before 2000. In terms of language, the current review of international research covered outputs written in English only and therefore potentially missed a hidden literature written in other languages. The evidence base has been predominantly drawn from relevant studies in the United States. This issue of geographical coverage requires a caution in interpreting the findings in the English context.

Second, the findings from this review have been mostly reliant on correlational studies while characteristics of school leadership, culture, climate, and structure to support teacher retention is arguably 'best' evidenced through studies (e.g., randomised controlled trials) allowing for cause-effect conclusions. Many correlational studies identified in this review used self-reported responses as a main source of data and without applying appropriate strategies to mitigate potential biases. Key constructs and their dimensions, for example, principal effectiveness and job satisfaction continue to be loosely theorised and therefore would benefit from increased specificity and more nuanced operationalisation in future research.

Third, ranking the effectiveness of the characteristics of school leadership, culture, climate, and structure to support teacher retention goes beyond the aim, scope, and resources of this rapid review. Indeed, the current evidence base offers no firm basis to specify, which characteristics are the most salient in retaining teachers. However, we wish to argue that identifying these evidence-based characteristics is critical in informing future empirical research and reviews of evidence.

Team

- Dr Dong Nguyen—Reviewer 1 (School of Education, Durham University): Principal investigator, team leader, lead author of the review.
- Prof. Beng Huat See—Reviewer 2 (School of Education, Durham University): Co-investigator and co-author of the review.
- Prof. Chris Brown—Reviewer 3 (School of Education, University of Warwick): Co-investigator and co-author of the review.
- Dr Dimitra Kokotsaki—Reviewer 4 (School of Education, Durham University): Co-investigator and co-author of the review.
- Dr Nada El-Soufi—Reviewer 5 (School of Education, Durham University): Contributed to the search process, data extraction, and appraisal of studies.
- Ms Fujia Yang— PhD candidate (School of Education, Durham University): Provided the logistical support including obtaining full texts and referencing work.

Conflicts of interest

The team members are all members of staff at Durham University, United Kingdom and University of Warwick, United Kingdom. The team members are not in receipt of personal or research funding from any third parties relevant to this review. The team members are not in receipt of any other fundings from the EEF in England.

References

Achinstein, B., Ogawa, R. T., Sexton, D. and Freitas, C. (2010) 'Retaining Teachers of Color: A Pressing Problem and a Potential Strategy for "Hard-to-Staff" Schools'. *Review of Educational Research, 80* (1), pp. 71–107. https://doi.org/10.3102/0034654309355994

Amitai, A. and Van Houtte, M. (2022) 'Being Pushed Out of the Career: Former Teachers' Reasons for Leaving the Profession'. *Teaching and Teacher Education*, *110*, pp. 103540. https://doi.org/10.1016/j.tate.2021.103540

Arthur, L. and Bradley, S. (2023) 'Teacher Retention in Challenging Schools: Please Don't Say Goodbye!' *Teachers and Teaching*, pp. 1–19. https://doi.org/10.1080/13540602.2023.2201423

Ashiedu, J. A. and Scott-Ladd, B. D. (2012) 'Understanding Teacher Attraction and Retention Drivers: Addressing Teacher Shortages'. *Australian Journal of Teacher Education (Online)*, *37* (11), pp. 23–41. https://doi.org/10.14221/ajte.2012v37n11.1

Bakker, A. B. and Demerouti, E. (2007) 'The Job Demands-Resources Model: State of the Art'. *Journal of Managerial Psychology*, *22* (3), pp. 309–328. https://doi.org/10.1108/02683940710733115

Barbieri, B., Sulis, I., Porcu, M. and Toland, M. D. (2019) 'Italian Teachers' Well-Being Within the High School Context: Evidence From a Large Scale Survey'. *Frontiers in Psychology*, *10*, pp. 1926. https://doi.org/10.3389/fpsyg.2019.01926

Bartanen, B., Grissom, J. A. and Rogers, L. K. (2019) 'The Impacts of Principal Turnover'. *Educational Evaluation and Policy Analysis*, *41* (3), pp. 350–374. https://doi.org/10.3102/0162373719855044

Bass, B. M. and Avolio, B. J. (1997) *'Concepts of Leadership. Leadership: Understanding the Dynamics of Power and Influence in Organizations'.* Notre Dame, IN: University of Notre Dame Press. https://doi.org/10.2307/j.ctvpg85tk.6

Berg, J. K. and Cornell, D. (2016) 'Authoritative School Climate, Aggression Toward Teachers, and Teacher Distress in Middle School'. *School Psychology Quarterly*, 31 (1), pp. 122–139. https://doi.org/10.1037/spq0000132

Beteille, T., Kalogrides, D. and Loeb, S. (2016) 'Effective Schools: Managing the Recruitment, Development, and Retention of High-Quality Teachers'. CALDER Working Paper, 37. https://policycommons.net/artifacts/634180/effective-schools/1615527/

Billingsley, B. and Bettini, E. (2019) 'Special Education Teacher Attrition and Retention: A Review of the Literature'. *Review of Educational Research*, 89 (5), pp. 697–744. https://doi.org/10.3102/0034654319862495

Borman, G. D. and Dowling, N. M. (2008) 'Teacher Attrition and Retention: A Meta-Analytic and Narrative Review of the Research'. *Review of Educational Research,* 78, pp. 367–409. https://doi.org/10.3102/0034654308321455

Boyce, J. and Bowers, A. J. (2018) 'Toward an Evolving Conceptualization of Instructional Leadership as Leadership for Learning: Meta-Narrative Review of 109 Quantitative Studies Across 25 Years'. *Journal of Educational Administration*, 56 (2). https://doi.org/10.7916/D8HX2VZN

Boyd, D., Grossman, P., Ing, M., Lankford, H., Loeb, S. and Wyckoff, J. (2011) 'The Influence of School Administrators on Teacher Retention Decisions'. *American Educational Research Journal*, *48* (2), pp. 303–333. https://doi.org/10.3102/0002831210380788

Brady, J. and Wilson, E. (2021) 'Teacher Wellbeing in England: Teacher Responses to School-Level Initiatives'. *Cambridge Journal of Education*, 51 (1), pp. 45–63. https://doi.org/10.1080/0305764x.2020.1775789

Brady, J. and Wilson, E. (2022) 'Comparing Sources of Stress for State and Private School Teachers in England'. *Improving Schools*, 25 (2), pp. 205–220. https://doi.org/10.1177/13654802211024758

Bronfenbrenner, U. (1979) *The Ecology of Human Development: Experiments by Nature and Design.* Boston, MA: Harvard University Press.

Brown, K. M. and Wynn, S. R. (2007) 'Teacher Retention Issues: How Some Principals Are Supporting and Keeping New Teachers'. *Journal of School Leadership*, 17 (6), pp. 664–698. https://doi.org/10.1177/105268460701700601

Brunsting, N. C., Sreckovic, M. A. and Lane, K. L. (2014) 'Special Education Teacher Burnout: A Synthesis of Research From 1979 to 2013'. *Education and Treatment of Children*, pp. 681–711. https://doi.org/10.1353/etc.2014.0032

Buchanan, J. (2009) 'Where Are They Now? Ex-Teachers Tell Their Life-Work Stories'. *Issues in Educational Research*, 19 (1), pp. 1–13. https://opus.lib.uts.edu.au/bitstream/10453/11831/1/2009004993OK.pdf

Hallinger, P. and Kulophas, D. (2020) The evolving knowledge base on leadership and teacher professional learning: a bibliometric analysis of the literature, 1960-2018. *Professional Development in Education*, 46(4), pp. 521-540, https://doi.org/10.1080/19415257.2019.1623287

Campoli, A. K. and Conrad-Popova, D. (2017) 'Invisible Threads: Working Conditions, Interpersonal Relationships, and Turnover Among Black Female Teachers'. *Black Female Teachers: Diversifying the United States' Teacher Workforce* (pp. 117–134). Bingley, UK: Emerald Publishing Limited. https://doi.org/10.1108/s2051-231720170000006007

Cann, R. F., Riedel-Prabhakar, R. and Powell, D. (2021) 'A Model of Positive School Leadership to Improve Teacher Wellbeing'. *International Journal of Applied Positive Psychology*, 6, pp. 195–218. https://doi.org/10.1007/s41042-020-00045-5

Casely-Hayford, J., Johansson, S., Dutt, K. G., Kwak, L. and Toropova, A. (2023) 'The Role of Job Demands and Resources for Teacher Job Satisfaction: Insights from Five European Countries'. *International Encyclopedia of Education,* 4, pp. 213–231. http://doi.org/10.1016/B978-0-12-818630-5.04082-3

Cezmi Savas, A. and Toprak, M. (2014) 'Mediation Effect of Schools' Psychological Climate on the Relationship Between Principals' Leadership Style and Organizational Commitment'. *The Anthropologist*, 17 (1), pp. 173–182. https://doi.org/10.1080/09720073.2014.11891427

Cha, S. H. and Cohen-Vogel, L. (2011) 'Why They Quit: A Focused Look at Teachers Who Leave for Other Occupations'. *School Effectiveness and School Improvement,* 22 (4), pp. 371–392. https://doi.org/10.1080/09243453.2011.587437

Chaaban, Y. and Du, X. (2017) Novice Teachers' Job Satisfaction and Coping Strategies: Overcoming Contextual Challenges at Qatari Government Schools. *Teaching and Teacher Education*, 67, pp. 340–350. https://doi.org/10.1016/j.tate.2017.07.002

Cheng, H., Fan, Y. and Lau, H. (2023) 'An Integrative Review on Job Burnout Among Teachers in China: Implications for Human Resource Management'. *The International Journal of Human Resource Management*, 34 (3), pp. 529–561. https://doi.org/10.1080/09585192.2022.2078991

Chin, J. M. C. (2007). 'Meta-Analysis of Transformational School Leadership Effects on School Outcomes in Taiwan and the USA'. *Asia Pacific Education Review*, 8 (2), pp. 166–177. https://doi.org/10.1007/bf03029253

Coe, R., Kime, S., and Singleton, D. (2022). A model for school environment and leadership (School environment and leadership: Evidence review). *Evidence Based Education*. https://evidencebased.education/school-environment-and-leadership-evidence-review/#reports

Collie, R. J., Malmberg, L. E., Martin, A. J., Sammons, P. and Morin, A. J. (2020) 'A Multilevel Person-Centered Examination of Teachers' Workplace Demands and Resources: Links With Work-Related Well-Being'. *Frontiers in Psychology*, 11, pp. 626. https://doi.org/10.3389/fpsyg.2020.00626

Cooper-Gibson Research. (2018) *Factors Affecting Teacher Retention: Qualitative Investigation*. *Research Report.* London, UK: Department for Education. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/686947/Factors_affecting_teacher_retention_-_qualitative_investigation.pdf

Da'as, R. A. (2021) 'School Principals' Skills and Teacher Absenteeism During Israeli Educational Reform: Exploring the Mediating Role of Participation in Decision-Making, Trust and Job Satisfaction'. *Journal of Educational Change,* 22 (1), pp. 53–84. https://doi.org/10.1007/s10833-020-09385-0

DeMatthews, D. E., Knight, D. S. and Shin, J. (2022) 'The Principal-Teacher Churn: Understanding the Relationship Between Leadership Turnover and Teacher Attrition'. *Educational Administration Quarterly*, 58 (1), pp. 76–109. https://doi.org/10.1177/0013161x211051974

Dicke, T., Marsh, H. W., Parker, P. D., Guo, J., Riley, P. and Waldeyer, J. (2020) 'Job Satisfaction of Teachers and Their Principals in Relation to Climate and Student Achievement'. *Journal of Educational Psychology*, 112 (5), pp. 1061–1073. https://doi.org/10.1037/edu0000409

Donaldson, M. L. and Johnson, S. M. (2011) 'Teach for America Teachers: How Long Do They Teach? Why do They Leave?' *Phi Delta Kappan*, 93 (2), pp. 47–51. https://doi.org/10.1177/003172171109300211

Dumay, X. and Galand, B. (2012) 'The Multilevel Impact of Transformational Leadership on Teacher Commitment: Cognitive and Motivational Pathways'. *British Educational Research Journal*, 38 (5), pp. 703–729. https://doi.org/10.1080/01411926.2011.577889

Dupriez, V., Delvaux, B. and Lothaire, S. (2016) 'Teacher Shortage and Attrition: Why Do They Leave?' *British Educational Research Journal*, 42 (1), pp. 21–39. https://doi.org/10.1002/berj.3193

Dworkin, A. G., Saha, L. J. and Hill, A. N. (2003) 'Teacher Burnout and Perceptions of a Democratic School Environment'. *International Education Journal*, 4 (2), pp. 108–120. http://ehlt.flinders.edu.au/education/iej/articles/v4n2/dworkin/paper.pdf

Ebadijalal, M. and Moradkhani, S. (2022) 'Understanding EFL Teachers' Wellbeing: An Activity Theoretic Perspective'. *Language Teaching Research*, 13621688221125558. https://doi.org/10.1177/13621688221125558

European Union. (2013) *Study on Policy Measures to Improve the Attractiveness of the Teaching Profession in Europe: Final Report. Volume 2.* Luxembourg: European Union. [Available on this link].

Farinde-Wu, A. and Fitchett, P. G. (2018) 'Searching for Satisfaction: Black Female Teachers' Workplace Climate and Job Satisfaction'. *Urban Education*, 53 (1), pp. 86–112. https://doi.org/10.1177/0042085916648745

Favero, N. and Bullock, J. B. (2015) 'How (Not) to Solve the Problem: An Evaluation of Scholarly Responses to Common Source Bias'. *Journal of Public Administration Research and Theory*, (1), pp. 285–308. https://doi.org/10.1093/jopart/muu020

Feng, B. (2007) 'A Study of Teacher Job Satisfaction and Factors That Influence It'. *Chinese Education and Society*, 40 (5), pp. 47–64. https://doi.org/10.2753/ced1061-1932400506.

Feng, L. (2014) 'Teacher Placement, Mobility, and Occupational Choices After Teaching'. *Education Economics*, 22 (1), pp. 24–47. https://doi.org/10.1080/09645292.2010.511841

Frahm, M. T. and Cianca, M. (2021) 'Will They Stay or Will They Go? Leadership Behaviors That Increase Teacher Retention in Rural Schools'. *The Rural Educator*, 42 (3), pp. 1–13. https://doi.org/10.35608/ruraled.v42i3.1151

French, J. R. P., Jr., Rodgers, W. and Cobb, S. (1974) 'Adjustment as Person-Environment Fit'. In G. V. Coelho, D. A. Hamburg, and J. E. Adams (Eds.), *Coping and Adaptation*. New York City, NY: Basic Books.

Gamero Burón, C. and Lassibille, G. (2016) 'Job Satisfaction Among Primary School Personnel in Madagascar'. *The Journal of Development Studies*, 52 (11), pp. 1628–1646. https://doi.org/10.1080/00220388.2016.1187726

García Torres, D. (2018) 'Distributed Leadership and Teacher Job Satisfaction in Singapore'. *Journal of Educational Administration*, 56 (1), pp. 127–142. https://doi.org/10.1108/jea-12-2016-0140

García Torres, D. (2019) 'Distributed Leadership, Professional Collaboration, and Teachers' Job Satisfaction in US Schools'. *Teaching and Teacher Education*, 79, pp. 111–123. https://doi.org/10.1016/j.tate.2018.12.001

Geiger, T. and Pivovarova, M. (2018) 'The Effects of Working Conditions on Teacher Retention'. *Teachers and Teaching*, 24 (6), pp. 604–625. https://doi.org/10.1080/13540602.2018.1457524

Gerritsen, S., Plug, E. and Webbink, D. (2016) 'Teacher Quality and Student Achievement: Evidence From a Sample of Dutch Twins'. *Journal of Applied Econometrics*, 32 (3), pp. 643–660. https://doi.org/10.1002/jae.2539

Gilbert, A. (2011) 'There and Back Again: Exploring Teacher Attrition and Mobility with Two Transitioning Science Teachers'. *Journal of Science Teacher Education*, 22 (5), pp. 393–415. https://doi.org/10.1007/s10972-011-9240-5.

Gokalp, S. (2022) 'The Relationship Between School Principals' Cultural Intelligence Level and Teachers' Job Satisfaction and Intention to Leave the Job'. *European Journal of Educational Research*, 11 (1), pp. 493–509. https://doi.org/10.12973/eu-jer.11.1.493

Gorard, S. (2021) *How to Make Sense of Statistics*. Thousand Oaks, CA: SAGE Publications Ltd.

Gouëdard, P., Kools, M. and George, B. (2023) 'The Impact of Schools as Learning Organisations on Teachers' Self-Efficacy and Job Satisfaction: A Cross-Country Analysis'. *School Effectiveness and School Improvement*, 34 (3), pp. 331–357. https://doi.org/10.1080/09243453.2023.2196081

Grant, A. A. and Brantlinger, A. M. (2022) 'Demography as Destiny: Explaining the Turnover of Alternatively Certified Mathematics Teachers in Hard-To-Staff Schools'. *Teachers College Record*, 124 (4), pp. 35–64. https://doi.org/10.1177/01614681221096796

Griffith, J. (2004) 'Relation of Principal Transformational Leadership to School Staff Job Satisfaction, Staff Turnover, and School Performance'. *Journal of Educational Administration*, 42 (3), pp. 333–356. https://doi.org/10.1108/09578230410534667

Grissom, J. A. (2011) 'Can Good Principals Keep Teachers in Disadvantaged Schools? Linking Principal Effectiveness to Teacher Satisfaction and Turnover in Hard-To-Staff Environments'. *Teachers College Record*, 113 (11), pp. 2552–2585. https://doi.org/10.1177/016146811111301102

Grissom, J. A., Egalite, A. J. and Lindsay, C. A. (2021) *How Principals Affect Students and Schools: A Systematic Synthesis of Two Decades of Research.* New York City, NY: The Wallace Foundation. [Available on this link].

Guarino, C. M., Santibanez, L. and Daley, G. A. (2006) 'Teacher Recruitment and Retention: A Review of the Recent Empirical Literature'. *Review of Educational Research*, 76 (2), pp. 173–208. https://doi.org/10.3102/00346543076002173

Gunn, T. M. and McRae, P. A. (2021) 'Better Understanding the Professional and Personal Factors That Influence Beginning Teacher Retention in One Canadian Province'. *International Journal of Educational Research Open*, 2, pp. 100073. https://doi.org/10.1016/j.ijedro.2021.100073

Haddaway, N. R., Collins, A. M., Coughlin, D. and Kirk, S. (2015) 'The Role of Google Scholar in Evidence Reviews and Its Applicability to Grey Literature Searching'. *PLoS One,* 10 (9). https://doi.org/10.1371/journal.pone.0138237

Hariri, H., Monypenny, R. and Prideaux, M. (2012) 'Principalship in an Indonesian School Context: Can Principal Decision-Making Styles Significantly Predict Teacher Job Satisfaction?' *School Leadership and Management*, 32 (5), pp. 453–471. https://doi.org/10.1080/13632434.2012.723617

Hascher, T., Beltman, S. and Mansfield, C. (2021) 'Swiss Primary Teachers' Professional Well-Being During School Closure Due to the COVID-19 Pandemic'. *Frontiers in Psychology*, 12. https://doi.org/10.3389/fpsyg.2021.687512

Hean, S. and Garrett, R. (2001) 'Sources of Job Satisfaction in Science Secondary School Teachers in Chile'. *Compare: A Journal of Comparative and International Education*, 31 (3), pp. 363–379. https://doi.org/10.1080/03057920120098491

Heenan, I. W., De Paor, D., Lafferty, N. and McNamara, P. M. (2023) 'The Impact of Transformational School Leadership on School Staff and School Culture in Primary Schools—A Systematic Review of International Literature'. *Societies*, 13 (6), p. 133. https://doi.org/10.3390/soc13060133

Heffernan, A., Bright, D., Kim, M., Longmuir, F. and Magyar, B. (2022) ' 'I Cannot Sustain the Workload and the Emotional Toll': Reasons Behind Australian Teachers' Intentions to Leave the Profession'. *Australian Journal of Education*, 66 (2), pp. 196–209. https://doi.org/10.1177/00049441221086654

Hobson, A. J. and Maxwell, B. (2017) 'Supporting and Inhibiting the Well-Being of Early Career Secondary School Teachers: Extending Self-Determination Theory'. *British Educational Research Journal*, 43 (1), pp. 168–191. https://doi.org/10.1002/berj.3261

Hulpia, H., Devos, G. and Van Keer, H. (2009) 'The Influence of Distributed Leadership on Teachers' Organizational Commitment: A Multilevel Approach'. *The Journal of Educational Research*, 103 (1), pp. 40–52. https://doi.org/10.1080/00220670903231201

Husny Arar, K. and Massry-Herzllah, A. (2016) 'Motivation to Teach: The Case of Arab Teachers in Israel'. *Educational Studies*, 42 (1), pp. 19–35. https://doi.org/10.1080/03055698.2015.1127136

Ingersoll, R. and May, H. (2011) *Recruitment, Retention, and the Minority Teacher Shortage.* The Consortium for Policy Research in Education. Santa Cruz, CA: University of California. https://doi.org/10.12698/cpre.2011.rr69

Ingersoll, R. M. and Tran, H. (2023) 'Teacher Shortages and Turnover in Rural Schools in the US: An Organizational Analysis'. *Educational Administration Quarterly*, 59 (2), pp. 396–431. https://doi.org/10.1177/0013161x231159922

Jacob, R., Goddard, R., Kim, M., Miller, R. and Goddard, Y. (2015) 'Exploring the Causal Impact of the McREL Balanced Leadership Program on Leadership, Principal Efficacy, Instructional Climate, Educator Turnover, and Student Achievement'. *Educational Evaluation and Policy Analysis*, 37 (3), pp. 314–332. https://doi.org/10.3102/0162373714549620

Jerrim, J. and Sims, S. (2021) 'When is High Workload Bad for Teacher Wellbeing? Accounting for the Non-Linear Contribution of Specific Teaching Tasks'. *Teaching and Teacher Education*, 105, 103395. https://doi.org/10.1016/j.tate.2021.103395

Johnson, S. M. (2006) *The Workplace Matters: Teacher Quality, Retention, and Effectiveness. Working Paper.* Washington, DC: National Education Association Research Department. https://files.eric.ed.gov/fulltext/ED495822.pdf

Kamarudin, N. A., Ahmad, A., Halim, M. A. S., Abdullah, R. and Kamalrulzaman, N. I. (2022) 'The Correlation Between School Climate Dimensions and Teacher Well-Being in Malaysian Indigenous Schools'. *Journal of Nusantara Studies (JONUS)*, 7 (1), pp. 292–315. https://doi.org/10.24200/jonus.vol7iss1pp292-315

Katsantonis, I. G. (2020) 'Investigation of the Impact of School Climate and Teachers' Self-Efficacy on Job Satisfaction: A Cross-Cultural Approach'. *European Journal of Investigation in Health, Psychology and Education*, 10 (1), pp. 119–133. https://doi.org/10.3390/ejihpe10010011

Kelchtermans, G. (2017) ' 'Should I Stay or Should I Go?': Unpacking Teacher Attrition/Retention as an Educational Issue'. *Teachers and Teaching,* 23 (8), pp. 961–977. https://doi.org/10.1080/13540602.2017.1379793

Kim, J. (2019) 'How Principal Leadership Seems to Affect Early Career Teacher Turnover'. *American Journal of Education*, 126 (1), pp. 101–137. https://doi.org/10.1086/705533

Kouhsari, M., Chen, J. and Baniasad, S. (2022) 'Multilevel Analysis of Teacher Professional Well-Being and Its Influential Factors Based on TALIS Data'. *Research in Comparative and International Education*. 18 (3), pp. 395–418. https://doi.org/10.1177/17454999221143847

Kraft, M. A., Marinell, W. H. and Shen-Wei Yee, D. (2016) 'School Organizational Contexts, Teacher Turnover, and Student Achievement: Evidence From Panel Data'. *American Educational Research Journal*, 53 (5), pp. 1411–1449. https://doi.org/10.3102/0002831216667478

Kukla-Acevedo, S. (2009) 'Leavers, Movers, and Stayers: The Role of Workplace Conditions in Teacher Mobility Decisions'. *The Journal of Educational Research*, 102 (6), pp. 443–452. https://doi.org/10.3200/joer.102.6.443-452

Kwong, J., Wang, H. and Clifton, R. A. (2010) 'Rethinking Our Assumptions About Teachers' Job Satisfaction in China and the West'. *Australian Journal of Education*, 54 (2), pp. 115–132. https://doi.org/10.1177/000494411005400202

Ladd, H. F. (2011) 'Teachers' Perceptions of Their Working Conditions: How Predictive of Planned and Actual Teacher Movement?' *Educational Evaluation and Policy Analysis*, 33 (2), pp. 235–261. https://doi.org/10.3102/0162373711398128

Lazcano, C., Guerrero, P. and Volante, P. (2022) 'Influence of Instructional Leadership on Teacher Retention'. *International Journal of Leadership in Education*, 1–19. https://doi.org/10.1080/13603124.2022.2066187

Lee, J. Y., Park, J. H. and Lee, I. H. (2023) 'The Effect of Teacher Influence Relative to Principal Influence in School Decision-Making on Teacher Job Attitudes'. *Educational Studies*, 49 (3), pp. 529–546. https://doi.org/10.1080/03055698.2023.2174799

Li, Q., Gu, Q. and He, W. (2019) 'Resilience of Chinese Teachers: Why Perceived Work Conditions and Relational Trust Matter'. *Measurement: Interdisciplinary Research and Perspectives*, 17 (3), pp. 143–159. https://doi.org/10.1080/15366367.2019.1588593

Li, R., Liu, H., Chen, Y. and Yao, M. (2021) 'Why Teachers Want to Leave? The Roles of Achievement Goals, Burnout and Perceived School Context'. *Learning and Individual Differences*, 89, 102032. https://doi.org/10.1016/j.lindif.2021.102032

Liebowitz, D. D. and Porter, L. (2019) 'The Effect of Principal Behaviors on Student, Teacher, and School Outcomes: A Systematic Review and Meta-Analysis of the Empirical Literature'. *Review of Educational Research*, 89 (5), pp. 785–827. https://doi.org/10.3102/0034654319866133

Lim, S. and Eo, S. (2014) 'The Mediating Roles of Collective Teacher Efficacy in the Relations of Teachers' Perceptions of School Organizational Climate to Their Burnout'. *Teaching and Teacher Education*, 44, pp. 138–147. https://doi.org/10.1016/j.tate.2014.08.007

Lindsay, C. and Egalite, A. J. (2020) *The Effects of Principal-Teacher Demographic Matching on Teacher Turnover in North Carolina*. Chicago, IL: Spencer Foundation. https://www.newschools.org/wp-content/uploads/2020/10/Constance-Lindsay-Research-Paper-1.pdf

Liu, L., Liu, P., Yang, H., Yao, H. and Thien, L. M. (2022) 'The Relationship Between Distributed Leadership and Teacher Well-Being: The Mediating Roles of Organisational Trust'. *Educational Management Administration and Leadership*. https://doi.org/10.1177/17411432221113683

Liu, S., Keeley, J. W. and Sui, Y. (2023) 'Multi-Level Analysis of Factors Influencing Teacher Job Satisfaction in China: Evidence From the TALIS 2018'. *Educational Studies*, 49 (2), pp. 239–259. https://doi.org/10.1080/03055698.2020.1837615

Liu, S., Keeley, J. W., Sui, Y. and Sang, L. (2021) 'Impact of Distributed Leadership on Teacher Job Satisfaction in China: The Mediating Roles of Teacher Autonomy and Teacher Collaboration'. *Studies in Educational Evaluation*, 71, 101099. https://doi.org/10.1016/j.stueduc.2021.101099

Liu, Y., Bellibaş, M. Ş. and Gümüş, S. (2021) 'The Effect of Instructional Leadership and Distributed Leadership on Teacher Self-Efficacy and Job Satisfaction: Mediating Roles of Supportive School Culture and Teacher Collaboration'. *Educational Management Administration and Leadership*, 49 (3), pp. 430–453. https://doi.org/10.1177/1741143220910438

Loeb, S., Darling-Hammond, L. and Luczak, J. (2005) 'How Teaching Conditions Predict Teacher Turnover in California schools'. *Peabody Journal of Education*, 80 (3), pp. 44–70. https://doi.org/10.1207/s15327930pje8003_4

Long, R. and Danechi, S. (2022) *Teacher Recruitment and Retention in England*. London, UK: House of Commons Library.

Lopes, J. and Oliveira, C. (2020) 'Teacher and School Determinants of Teacher Job Satisfaction: A Multilevel Analysis'. *School Effectiveness and School Improvement*, 31 (4), pp. 641–659. https://doi.org/10.1080/09243453.2020.1764593

Madigan, D. J. and Kim, L. E. (2021) 'Towards an Understanding of Teacher Attrition: A Meta-Analysis of Burnout, Job Satisfaction, and Teachers' Intentions to Quit'. *Teaching and Teacher Education*, 105, 103425. https://doi.org/10.1016/j.tate.2021.103425

Martín-Martín, A., Orduna-Malea, E., Thelwall, M., and López-Cózar, E. D. (2018). Google Scholar, Web of Science, and Scopus: A systematic comparison of citations in 252 subject categories. *Journal of Informetrics*, 12(4), 1160–1177. https://doi.org/10.1016/j.joi.2018.09.002

Massry-Herzallah, A. and Arar, K. (2019) 'Gender, School Leadership and Teachers' Motivations: The Key Role of Culture, Gender and Motivation in the Arab Education System'. *International Journal of Educational Management*, 33 (6), pp. 1395–1410. http://doi.org/10.1108/IJEM-02-2019-0054

McLean, D., Worth, J. and Faulkner-Ellis, H. (2023) *Teacher Labour Market in England: Annual Report 2023*. http://hdl.voced.edu.au/10707/648474

Mintzberg, H. (1979) *The Structuring of Organisations.* Hoboken, NJ: Prentice-Hall.

Nguyen, T. D. (2021) 'Linking School Organizational Characteristics and Teacher Retention: Evidence From Repeated Cross-Sectional National Data'. *Teaching and Teacher Education*, 97, 103220. https://doi.org/10.1016/j.tate.2020.103220

Nguyen, T. D., Pham, L., Springer, M. G. and Crouch, M. (2019) *The Factors of Teacher Attrition and Retention: An Updated and Expanded Meta-Analysis of the Literature. EdWorking Paper No. 19–149.* Providence, RI: Annenberg Institute at Brown University. https://doi.org/10.26300/cdf3-4555

Ni, Y. (2017) 'Teacher Working Conditions, Teacher Commitment, and Charter Schools'. *Teachers College Record*, 119 (6), pp. 1–38. https://doi.org/10.1177/016146811711900606

Nir, A. E. (2002) 'School-Based Management and Its Effect on Teacher Commitment'. *International Journal of Leadership in Education*, 5 (4), pp. 323–341. https://doi.org/10.1080/13603120210134616

Olsen, A. and Huang, F. (2019) 'Teacher Job Satisfaction by Principal Support and Teacher Cooperation: Results From the Schools and Staffing Survey. *Education Policy Analysis Archives*, 27 (11), pp. 1–31. https://doi.org/10.14507/epaa.27.4174

Ost, B. and Schiman, J. C. (2015) 'Grade-Specific Experience, Grade Reassignments, and Teacher Turnover. *Economics of Education Review*, 46, pp. 112–126. https://doi.org/10.1016/j.econedurev.2015.03.004

Paletta, A., Alivernini, F. and Manganelli, S. (2017) 'Leadership for Learning: The Relationships Between School Context, Principal Leadership and Mediating Variables'. *International Journal of Educational Management*, 31 (2), 98–117. https://dx.doi.org/10.1108/IJEM-11-2015-0152

Palma-Vasquez, C., Carrasco, D. and Tapia-Ladino, M. (2022) 'Teacher Mobility: What Is It, How Is It Measured and What Factors Determine It? A Scoping Review'. *International Journal of Environmental Research and Public Health*, 19 (4), p. 2313. https://doi.org/10.3390/ijerph19042313

Pan, H. L. W., Chung, C. H. and Lin, Y. C. (2023) 'Exploring the Predictors of Teacher Well-Being: An Analysis of Teacher Training Preparedness, Autonomy, and Workload'. *Sustainability*, 15 (7), p. 5804. https://doi.org/10.3390/su15075804

Peters, J. and Pearce, J. (2012) 'Relationships and Early Career Teacher Resilience: A Role for School Principals'. *Teachers and Teaching*, 18 (2), pp. 249–262. https://doi.org/10.1080/13540602.2012.632266

Pietsch, M., Tulowitzki, P. and Koch, T. (2019) 'On the Differential and Shared Effects of Leadership for Learning on Teachers' Organizational Commitment and Job Satisfaction: A Multilevel Perspective. *Educational Administration Quarterly*, 55 (5), pp. 705–741. https://doi.org/10.1177/0013161x18806346

Player, D., Youngs, P., Perrone, F. and Grogan, E. (2017) 'How Principal Leadership and Person-Job Fit Are Associated With Teacher Mobility and Attrition'. *Teaching and Teacher Education*, 67, 330–339. https://doi.org/10.1016/j.tate.2017.06.017

Price, H. E. and Weatherby, K. (2018) 'The Global Teaching Profession: How Treating Teachers as Knowledge Workers Improves the Esteem of the Teaching Profession'. *School Effectiveness and School Improvement*, 29 (1), pp. 113–149. https://doi.org/10.1080/09243453.2017.1394882

Pyhältö, K., Pietarinen, J. and Soini, T. (2015) 'When Teaching Gets Tough-Professional Community Inhibitors of Teacher-Targeted Bullying and Turnover Intentions'. *Improving Schools*, 18 (3), pp. 263–276. https://doi.org/10.1177/1365480215589663

Räsänen, K., Pietarinen, J., Väisänen, P., Pyhältö, K. and Soini, T. (2022) 'Experienced Burnout and Teacher–Working Environment Fit: A Comparison of Teacher Cohorts With or Without Persistent Turnover Intentions'. *Research Papers in Education*, 1–24. https://doi.org/10.1080/02671522.2022.2125054

Razavipour, K. and Yousefi, M. (2017) 'Iranian English Language Teachers' Job Satisfaction and Organisational Climate in Public and Private Schools'. *Issues in Educational Research*, 27 (4), pp. 842–858. https://www.iier.org.au/iier27/razavipour.pdf

Redding, C. and Nguyen, T. D. (2020) 'Recent Trends in the Characteristics of New Teachers, the Schools in Which They Teach, and Their Turnover Rates'. *Teachers College Record*, 122 (7), pp. 1–36. https://doi.org/10.1177/016146812012200711

Redding, C., Booker, L. N., Smith, T. M. and Desimone, L. M. (2019) 'School Administrators' Direct and Indirect Influences on Middle School Math Teachers' Turnover'. *Journal of Educational Administration*, 57 (6), pp. 708–730. https://doi.org/10.1108/jea-10-2018-0190

Richards, K. A., Hemphill, M. A. and Templin, T. J. (2018) 'Personal and Contextual Factors Related to Teachers' Experience With Stress and Burnout'. *Teachers and Teaching*, 24 (7), pp. 768–787. https://doi.org/10.1080/13540602.2018.1476337

Robinson, V. M., Lloyd, C. A. and Rowe, K. J. (2008) 'The Impact of Leadership on Student Outcomes: An Analysis of the Differential Effects of Leadership Types'. *Educational Administration Quarterly,* 44 (5), pp. 635–674. https://doi.org/10.1177/0013161X08321

Roch, C. H. and Sai, N. (2017) 'Charter School Teacher Job Satisfaction'. *Educational Policy*, 31 (7), pp. 951–991. https://doi.org/10.1177/0895904815625281

Roch, C. H. and Sai, N. (2018). 'Stay or Go? Turnover in CMO, EMO and Regular Charter Schools'. *The Social Science Journal*, 55 (3), pp. 232–244. https://doi.org/10.1016/j.soscij.2018.02.016

Rudasill, K. M., Snyder, K. E., Levinson, H. and Adelson, J. L. (2018) 'Systems View of School Climate: A Theoretical Framework for Research'. *Educational Psychology Review*, 30, 35–60. https://doi.org/10.1007/s10648-017-9401-y

Sass, D. A., Flores, B. B., Claeys, L. and Pérez, B. (2012) 'Identifying Personal and Contextual Factors That Contribute to Attrition Rates for Texas Public School Teachers. *Education Policy Analysis Archives/Archivos Analíticos de Políticas Educativas*, 20, 1–26. https://doi.org/10.14507/epaa.v20n15.2012

Sass, D. A., Seal, A. K. and Martin, N. K. (2011) 'Predicting Teacher Retention Using Stress and Support Variables'. *Journal of Educational Administration*, 49 (2), pp. 200–215. https://doi.org/10.1108/09578231111116734

Scallon, A. M., Bristol, T. J. and Esboldt, J. (2023) 'Teachers' Perceptions of Principal Leadership Practices That Influence Teacher Turnover'. *Journal of Research on Leadership Education*, 18 (1), pp. 80–102. https://doi.org/10.1177/19427751211034214

Schein, E. H. (1992) *Organizational Culture and Leadership, Second Edition*. San Francisco, CA: Jossey Bass.

Scheopner, A. J. (2010) 'Irreconcilable Differences: Teacher Attrition in Public and Catholic Schools'. *Educational Research Review*, 5 (3), pp. 261–277. https://doi.org/10.1016/j.edurev.2010.03.001

Schoen, L. T. and Teddlie, C. (2008) 'A New Model of School Culture: A Response to a Call For Conceptual Clarity'. *School Effectiveness and School Improvement*, 19 (2), pp. 129–153. https://doi.org/10.1080/09243450802095278

See, B. H., Morris, R., Gorard, S. and El Soufi, N. (2020) 'What Works in Attracting and Retaining Teachers in Challenging Schools and Areas?' *Oxford Review of Education*, 46 (6), pp. 678–697. https://doi.org/10.1080/03054985.2020.1775566

Shackleton, N., Bonell, C., Jamal, F., Allen, E., Mathiot, A., Elbourne, D. and Viner, R. (2019) 'Teacher Burnout and Contextual and Compositional Elements of School Environment'. *Journal of School Health*, 89 (12), pp. 977–993. https://doi.org/10.1111/josh.12839

Shen, J., Leslie, J. M., Spybrook, J. K. and Ma, X. (2012) 'Are Principal Background and School Processes Related to Teacher Job Satisfaction? A Multilevel Study Using Schools and Staffing Survey 2003–04. *American Educational Research Journal*, 49 (2), pp. 200–230. https://doi.org/10.3102/0002831211419949

Shuls, J. V. and Flores, J. M. (2020) 'Improving Teacher Retention Through Support and Development'. *Journal of Educational Leadership and Policy Studies*, 4 (1), pp. 1–19. https://files.eric.ed.gov/fulltext/EJ1282763.pdf

Sims, S. (2020) 'Modelling the Relationships Between Teacher Working Conditions, Job Satisfaction and Workplace Mobility'. *British Educational Research Journal*, 46 (2), pp. 301–320. https://doi.org/10.1002/berj.3578

Sorensen, L. C. and Ladd, H. F. (2018) *The Hidden Costs of Teacher Turnover. CALDER Working Paper No. 203-0918-1.* Arlington, VA: CALDER. https://files.eric.ed.gov/fulltext/ED591843.pdf

Sun, A. and Xia, J. (2018) 'Teacher-Perceived Distributed Leadership, Teacher Self-Efficacy and Job Satisfaction: A Multilevel SEM Approach Using the 2013 TALIS Data'. *International Journal of Educational Research*, 92, pp. 86–97. https://doi.org/10.1016/j.ijer.2018.09.006

Sun, M. (2018) 'Black Teachers' Retention and Transfer Patterns in North Carolina: How Do Patterns Vary by Teacher Effectiveness, Subject, and School Conditions?' *AERA Open*, 4 (3). https://doi.org/10.1177/2332858418784914

Sutcher, L., Darling-Hammond, L. and Carver-Thomas, D. (2016) *A Coming Crisis in Teaching? Teacher Supply, Demand, and Shortages in the U.S.* Palo Alto, CA: Learning Policy Institute. https://files.eric.ed.gov/fulltext/ED606666.pdf

Tereshchenko, A., Mills, M. and Bradbury, A. (2020) *Making Progress? Employment and Retention of BAME Teachers in England*. London, UK: UCL Institute of Education. https://doi.org/10.31235/osf.io/awx3v

Tesfaw, T. A. (2014) 'The Relationship Between Transformational Leadership and Job Satisfaction: The Case of Government Secondary School Teachers in Ethiopia'. *Educational Management Administration and Leadership*, 42 (6), pp. 903–918. https://doi.org/10.1177/1741143214551948

Thapa, A., Cohen, J., Guffey, S. and Higgins-D'Alessandro, A. (2013) 'A Review of School Climate Research'. *Review of Educational Research*, 83 (3), pp. 357–385. https://doi.org/10.3102/0034654313483

Tiplic, D., Brandmo, C. and Elstad, E. (2015) 'Antecedents of Norwegian Beginning Teachers' Turnover Intentions'. *Cambridge Journal of Education*, 45 (4), 451–474. https://doi.org/10.1080/0305764x.2014.987642

Toropova, A., Myrberg, E. and Johansson, S. (2021) 'Teacher Job Satisfaction: The Importance of School Working Conditions and Teacher Characteristics'. *Educational Review*, 73 (1), pp. 71–97. https://doi.org/10.1080/00131911.2019.1705247

Torres, A. C. (2016) 'The Uncertainty of High Expectations: How Principals Influence Relational Trust and Teacher Turnover in No Excuses Charter Schools. *Journal of School Leadership*, 26 (1), pp. 61–91. https://doi.org/10.1177/105268461602600103

Tran, H. and Dou, J. (2019) 'An Exploratory Examination of What Types of Administrative Support Matter for Rural Teacher Talent Management: The Rural Educator Perspective'. *Education Leadership Review,* 20 (1), pp. 133–149. https://files.eric.ed.gov/fulltext/EJ1234912.pdf

Trinidad, J. E. (2021) 'Teacher Satisfaction and Burnout During COVID-19: What Organizational Factors Help?' *International Journal of Leadership in Education*, 1–19. https://doi.org/10.1080/13603124.2021.2006795

Urick, A. (2016) 'The Influence of Typologies of School Leaders on Teacher Retention: A Multilevel Latent Class Analysis'. *Journal of Educational Administration*, 54 (4), pp. 434–468. https://doi.org/10.1108/jea-08-2014-0090

Urick, A. (2020) 'What Type of School Leadership Makes Teachers Want to Stay? *NASSP Bulletin*, 104 (3), pp. 145–176. https://doi.org/10.1177/0192636520949682

Van Droogenbroeck, F. and Spruyt, B. (2014) 'To Stop or Not to Stop: An Empirical Assessment of the Determinants of Early Retirement Among Active and Retired Senior Teachers'. *Research on Aging*, 36 (6), pp. 753–777. https://doi.org/10.1177/0164027513519449

Van Droogenbroeck, F., Spruyt, B. and Vanroelen, C. (2014) 'Burnout Among Senior Teachers: Investigating the Role of Workload and Interpersonal Relationships at Work'. *Teaching and Teacher Education*, 43, pp. 99–109. https://doi.org/10.1016/j.tate.2014.07.005

Van Droogenbroeck, F., Spruyt, B., Quittre, V. and Lafontaine, D. (2021) 'Does the School Context Really Matter for Teacher Burnout? Review of Existing Multilevel Teacher Burnout Research and Results From the Teaching and Learning International Survey 2018 in the Flemish-and French-Speaking

Communities of Belgium'. *Educational Researcher*, 50 (5), pp. 290–305. https://doi.org/10.3102/0013189X21992361

Van Maele, D. and Van Houtte, M. (2012) 'The Role of Teacher and Faculty Trust in Forming Teachers' Job Satisfaction: Do Years of Experience Make a Difference?' *Teaching and Teacher Education*, 28 (6), pp. 879–889. https://doi.org/10.1016/j.tate.2012.04.001

Wronowski, M. L. and Urick, A. (2019) 'Examining the Relationship of Teacher Perception of Accountability and Assessment Policies on Teacher Turnover During NCLB'. *Education Policy Analysis Archives*, 27 (86). https://doi.org/10.14507/epaa.27.3858

Wynn, S. R. and Brown, K. M. (2008) 'Principal Leadership and Professional Learning Communities: What Beginning Teachers Value'. *International Journal of Educational Reform*, 17 (1), 37–63. https://doi.org/10.1177/105678790801700104

You, S., Kim, A. Y. and Lim, S. A. (2017) 'Job Satisfaction Among Secondary Teachers in Korea: Effects of Teachers' Sense of Efficacy and School Culture'. *Educational Management Administration and Leadership*, 45 (2), pp. 284–297. https://doi.org/10.1177/1741143215587311

Zupic, I., and Cater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, 18(3), pp.429-472

Appendix 1: Development of research questions (RQs)

At the planning stage of this review project, we started with four initial RQs as follows. However, our pilot review study provided us with insights to inform some adjustments of (the wording of) two RQs (RQ1b and RQ3).

RQ1a. What school leadership characteristics support teacher retention in general?

RQ1b. What school leadership characteristics support teacher retention in disadvantaged schools?

RQ2. What characteristics of school culture, climate, and structure support teacher retention?

RQ3. What school leadership characteristics promote positive school culture, climate, and organisational structure that supports teacher retention?

First, regarding RQ3, there is a great body of literature on influences of school leadership on school culture, climate, and structure, but without reference to teacher retention or related outcomes—so this literature goes beyond the scope of the current review. Second, an initial analysis of a limited number of empirical studies that discuss the influences of school leadership on school culture, climate, and structure, and with reference to teacher retention or related outcomes suggested that these findings meaningfully fall in the categories of evidence to address the original RQ1a and RQ2. Therefore, we decided to remove RQ3.

The original RQ1b, focusing on disadvantaged schools, does not have the words of culture, climate, and structure. However, we decided to include these words in the adapted RQ, upon the pilot study. This addition aimed to provide more integrative insights into the possible influences of major organisational factors on retaining teachers in disadvantaged schools. To strengthen coherence, we adjusted the order of the three finalised RQs, as presented in the Introduction of this report.

Appendix 2: Rationale for using selected databases and search engines.

- Scopus
- Web of Science
- Google and Google Scholar

The launch of integrated multidisciplinary databases and search engines of the Web of Science (1997), Google Scholar (2004), and Scopus (2004) has enabled search of academic literature to be more systematic and reliable. These three databases and search engines have more advantages in terms of both coverage and systematic data extraction, as compared with a manual search for printed journals and the use of (a combination of) subject-specific databases such as A+ Education, Eric, JSTOR, PsychINFO, and ProQuest.

We used two comprehensive databases of **Scopus** and the **Web of Science** to locate **peer-reviewed journal articles, books, and book chapters** based on a careful consideration of the purpose and focus of this scoping review and of practicality.

Our decision to mainly utilise **Scopus** and the **Web of Science** to search for peer-reviewed journal articles was informed and justified by the findings from the latest, major study of Martín-Martín et al. (2018) that compared the coverage of research outputs among the most comprehensive databases. Martín-Martín et al. (2018) concluded: (i) the overlap of research outputs covered by Google Scholar, Scopus, and the Web of Science is substantial; (ii) Google Scholar has more coverage than Scopus and the Web of Science; however, many of those sources uniquely indexed by the Google Scholar are not journal articles; (iii) 11.7% of the research outputs covered by Scopus but not by the Web of Science while only 3.9% of the research outputs indexed by the Web of Science but not by Scopus. This finding (in iii) suggests that Scopus has a more comprehensive coverage of peer-reviewed documents in social sciences (including education) than the Web of Science; and (iv) Scopus offers more complete bibliographic data and sophisticated engines to search for and extract data than Google Scholar (Zupic and Čater, 2015). We conducted a search on **both Scopus** and the **Web of Science** to strengthen the confidence on the coverage of our review.

We used **Google** and **Google Scholar** to search for relevant research reports that have not been published in academic journals.

Appendix 3: Sets of keywords

Set 1. A set of keywords for school leadership-related constructs. Our development of this set is informed by the key, previous reviews of school leadership (e.g., Grissom et al., 2021; Hallinger and Kulophas, 2019; Robinson et al., 2008).

> "Leadership" OR "management" OR "administration" OR "head master" OR "headmaster" OR "school leadership" OR "school leader" OR "principalship" OR "principal leadership" OR "vice-principal" OR "headship" OR "deputy headship" OR "headteacher" OR "deputy headteacher" OR "head teacher" OR "deputy head teacher" OR "school management" OR "school administration" OR "school governance" OR "school principal" OR "school administrator" OR "school director" OR "assistant principal*" OR "assistant head*"

Set 2. A set of keywords for constructs related to school culture, climate, and structure. Our development of this set is informed by key work focusing on these constructs (e.g., Achistein et al., 2010; Coe et al., 2022; Schoen and Teddlie, 2008).

> "culture" OR "climate" OR "working environment" OR "school culture" OR "organisational culture" OR "organizational culture" OR "school climate" OR "school environment" OR "institution" OR "school context" OR "working condition" OR "school organisation" OR "school organization" OR "culture" OR "school context" OR "workload"

Set 3. A set of keywords for teacher retention, recruitment, and other related teacher outcomes. Our formulation of this set is informed by key reviews on the literature of teacher retention and teacher outcomes (e.g., Borman and Dowling, 2008; See et al., 2020).

> "teacher recruitment" OR "teacher retention" OR "teacher mobility" OR "teacher attrition" OR "teacher shortage" OR "teacher supply" OR "teacher career change" OR "teacher turnover" OR "teacher attitude" OR "teacher belief" OR "teacher career development" OR "teacher career path" OR "teacher ethnicity" OR "teacher identity" OR "teacher burnout" OR "teacher work-related stress" OR "teacher work related stress" OR "teacher wellbeing" OR "teacher well-being" OR "intent* to quit" OR "teacher job satisfaction" OR "professional commitment" OR "teacher migration" OR "teacher persistence" OR "revolving door of teachers" OR "teacher stability" OR "teacher contentment" OR "teacher fulfilment"

We used the following three search combinations.

> Combination 1. Set 1 AND Set 2.
>
> Combination 2. Set 1 AND Set 3.
>
> Combination 3. Set 2 AND Set 3.

Three key words of "leadership", "management", and "administration" were not used in Combination 1 (Set 1 AND Set 2) because the pilot testing process showed that the inclusion of this word had resulted in a large number of results (approx. 461,709 document results on Scopus search on 12 April 2023) in business settings far beyond the focus of this review on school settings.

Appendix 4: Data extraction template

Author(s)	Year of publication	Country of origin	Aims/purposes	Research design	Sample size	Attrition	Outcome measures	Analytical strategies	Findings	Rating and comments on evidence

Appendix 5: Criteria for judging the strength of research evidence

(Gorard, 2021)

Reviewer …… Date ……_Author …… Year ……
Record Number ……..

Does this need to be cross-checked? YES □ NO □

Comments: ……

Design	Scale	Dropout	Data quality	Threats	Rating
Strong design for research question (RQ) (e.g., randomised controlled trial)	Large number of cases (per comparison group)	Minimal attrition, no evidence of impact on findings	Standardised, pre-specified independent outcome	No evidence of diffusion, demand, or other threat	4★
Good design for RQ (balanced comparisons, e.g., regression discontinuity design, difference in differences, administrative datasets using population data)	Medium number of cases (per comparison group)	Some attrition (or initial imbalance)	Outcome pre-specified, but not standardised or independent	Little evidence of diffusion, demand, or other threat	3★
Weak design for RQ (e.g., unmatched comparison, e.g., volunteers)	Small number of cases (per comparison group)	Moderate attrition (or initial imbalance)	Not pre-specified but valid in context	Evidence of diffusion, demand, or other threat	2★
Very weak design for RQ (e.g., single group, pre-post, or observational studies)	Very small number of cases (per comparison group)	High attrition (or initial imbalance)	Issues of validity or appropriateness	Strong indication of diffusion, demand, or other threat	1★
No consideration of design (no report of a comparator)	A trivial scale of study, or N unclear	Attrition huge or not reported	Poor reliability, too many outcomes, weak measures	No consideration of threats to validity	0

This appraisal tool (Gorard, 2021) is to be read from left to right and top to bottom, starting with the criterion of research design. As the research questions in this review imply causality, the strongest design would be a randomised controlled trial. These will be rated 4*. Moving across the scale, if the randomised controlled trial has a large sample in each arm, then it stays as 4*. It will drop to 3* if it is a small-scale study. Moving along to the right, if there is no or low attrition, then it remains at 3*. If there is high attrition, for example over 20% then it drops a star to 2* and so on.

Appendix 6: Critical appraisal checklist for qualitative research

(Adapted from Joanna Briggs Institute Critical Appraisal Checklist for Qualitative Research available on this link)

Reviewer …… Date ……Author …… Year …… Record Number ……..

Overall appraisal: Include □ Exclude □ Seek further info □ Comments (Including reason for exclusion): …….

	Yes	No	Unclear
1. Is there congruity between the research methodology/method used and the study's research questions and/or aims?			
2. Were the criteria for inclusion in the sample clearly defined?			
3. Were the study participants and the setting described in detail?			
4. Is there congruity between the research methodology/method and the representation and analysis of data?			
5. Are the findings accompanied by data/an illustration that offer clear support to the researcher's interpretation?			
6. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?			

Appendix 7: Critical appraisal checklist for reviews of empirical research

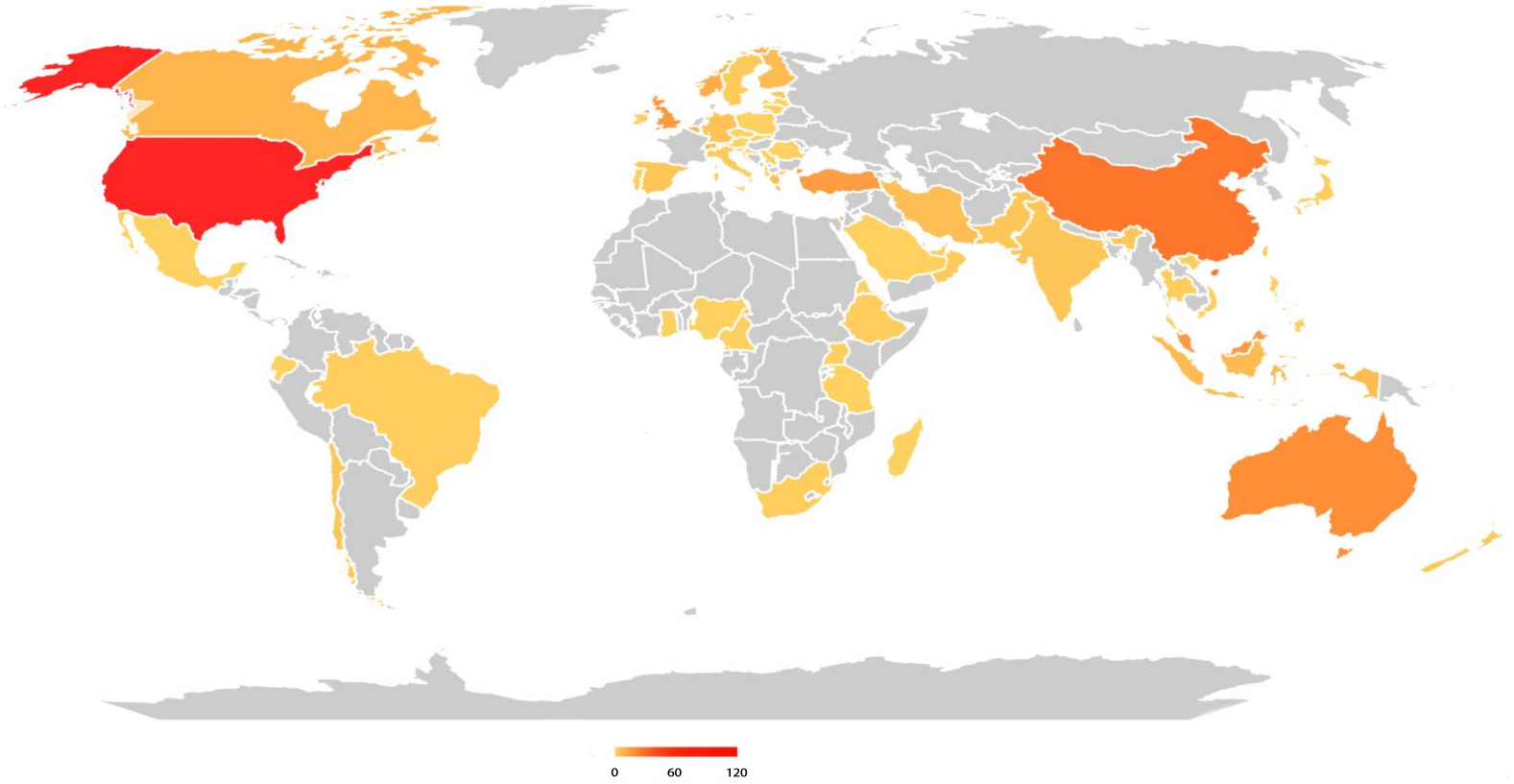
(Adapted from Joanna Briggs Institute Critical Checklist for Systematic Reviews and Research Syntheses available on this link)

Reviewer …… Date …… Author …… Year ……..
Record Number ……..

Overall appraisal: Include □ Exclude □ Seek further info □ Comments (Including reason for exclusion): …….

	Yes	No	Unclear
1. Is the review question clearly and explicitly stated?			
2. Were the inclusion criteria appropriate for the review question?			
3. Was the search strategy appropriate?			
4. Were the sources and resources used to search for studies adequate?			
5. Were the criteria for appraising studies appropriate?			
6. Was critical appraisal conducted?			
7. Were there methods to minimise errors in data extraction?			
8. Were the methods used to combine studies appropriate?			

Appendix 8: The number of research outputs by country



The number of research outputs by country linked with the heat map above.

Country / Nation	US	China	Israel	Australia	Malaysia	Turkey	UK
Number of publications	120	25	20	18	17	15	15
Country / Nation	**Belgium**	**Norway**	**Canada**	**Greece**	**Indonesia**	**Iran**	**Switzerland**
Number of publications	12	10	7	7	7	6	6
Country / Nation	**Finland**	**Germany**	**India**	**Pakistan**	**Estonia**	**Hong Kong**	**Korea**
Number of publications	5	5	4	4	3	3	3
Country / Nation	**Lebanon**	**Oman**	**Singapore**	**South Africa**	**Taiwan**	**Chile**	**Cyprus**
Number of publications	3	3	3	3	3	2	2
Country / Nation	**Ethiopia**	**Italy**	**New Zealand**	**Serbia**	**Slovakia**	**Spain**	**Sweden**
Number of publications	2	2	2	2	2	2	2
Country / Nation	**Thailand**	**Uganda**	**United Arab Emirates**	**Vietnam**	**Albania**	**Barbados**	**Brazil**
Number of publications	2	2	2	2	1	1	1
Country / Nation	**Cameroon**	**Croatia**	**Czech Republic**	**Eritrea**	**Ghana**	**Ireland**	**Japan**
Number of publications	1	1	1	1	1	1	1
Country / Nation	**Lithuania**	**Madagascar**	**Nigeria**	**Poland**	**Portugal**	**Qatar**	**Saudi Arabia**
Number of publications	1	1	1	1	1	1	1
Country / Nation	**Slovenia**	**South Korea**	**Tanzania**	**The Philippines**	**Across countries**		
Number of publications	1	1	1	1	13		

Note. ‘Across countries’ refer to publications based on data from more than one country.

Appendix 9: List of publications for each research question (RQ)

Note. A publication may contribute to addressing more than one RQ and be listed in more than one column. Therefore, the sum may be more than 89.

RQ1 *(52 publications)*		**RQ2** *(35 publications)*		**RQ3** *(20 publications)*
Barbieri et al. (2019[2*])	Li et al. (2019[2*])	Berg and Cornell (2016[2*])	García Torres (2019[2*])	Bartanen et al. (2019[2*])
Bartanen et al. (2019[3*])	Liu et al. (2022[2*])	Campoli and Conrad-Popova (2017[2*])	Liu et al. (2023[2*])	DeMatthews et al. (2022[2*])
Beteille et al. (2016[2*])	S. Liu et al. (2021[2*])	Casely-Hayford et al. (2023[2*])	Lopes and Oliveira (2020[2*])	Farinde-Wu and Fitchett (2018[2*;])
Boyd et al. (2011[2*])	Y. Liu et al. (2021[2*])Ni (2017[2*])	Cha & Cohen-Vogel (2011[2*])	Ni (2017[2*])	L. Feng (2014[2*])
Casely-Hayford et al. (2023[2*])	Nir (2002[2*])	Dicke et al. (2020[2*])	Olsen and Huang (2019[2*])	Geiger and Pivovarova (2018[2*])
Cezmi and Toprak (2014[2*])	Olsen and Huang (2019[2*])	Farinde-Wu and Fitchett (2018[2*])	Ost and Schiman (2015[2*])	Grissom (2011[2*])
Collie et al. (2020[2*])	Paletta et al. (2017[2*])	B. Feng (2007[2*])	Pan et al. (2023[2*])	Ingersoll and May (2011[2*])
Da'as (2021[2*&3*])[2]	Pan et al. (2023[2*])	Grant and Brantlinger (2022[2*])	Pyhältö et al. (2015[2*])	Ingersoll and Tran (2023[2*])
Donaldson and Johnson (2011[2*])	Pietsch et al. (2019[2*])	Heffernan et al. (2022[2*])	Redding and Nguyen (2020[3*])	Jacob et al. (2015[3*])
Dumay and Galand (2012[2*])	Player et al. (2017[2*])	Hulpia et al. (2009[2*])	Roch and Sai (2017[2*])	Kim (2019[2*])
Dupriez et al. (2016[2*])	Price and Weatherby (2018[2*])	Jerrim and Sims (2021[2*])	Sass et al. (2011[2*])	Ladd, (2011[2*])
Dworkin et al. (2003[2*])	Rasanen et al. (2022[2*])	Kamarudin et al. (2022[2*])	Shackleton et al. (2019[2*])	Lindsay and Egalite (2020[2*])
Gamero Burón and Lassibille (2016[2*])	Redding et al. (2019[2*])	Katsantonis (2020[2*])	Sims (2020[2*])	Loeb et al. (2005)
García Torres (2018[2*])	Roch and Sai (2017[2*])	Kouhsari et al. (2022[2*])	Tesfaw (2014[2*])	Nguyen (2021[2*])
García Torres (2019[2*])	Roch and Sai (2018[2*])	Kukla-Acevedo (2009[2*])	Toropova et al. (2021[2*])	Ni (2017[2*])
Geiger and Pivovarova (2018[2*])	Sun (2018[2*])	Li et al. (2021[2*])	Van Droogenbroeck and Spruyt (2014[2*])	Pietsch et al. (2019[2*])
Gokalp (2022[2*])	Sun and Xia (2018[2*])	Lim and Eo (2014[2*])	You et al. (2017[2*])	Redding and Nguyen (2020[3*])
Gouëdard et al. (2023[2*])	Tesfaw (2014[2*])	Roch and Sai (2018[2*])		Roch and Sai (2017[2*])
Grant and Brantlinger (2022[2*])	Tiplic et al. (2015[2*])			Roch and Sai (2018[2*])
Griffith (2004[2*])	Trinidad (2021[2*])			Sass et al. (2012[2*])
Hariri et al. (2012[2*])	Urick (2016[2*])			
Kim (2019[2*])	Urick (2020[2*])			
Kouhsari et al. (2022[2*])	Van Droogenbroeck et al. (2021[2*])			
Kraft et al. (2016[3*])	Van Maele and Van Houtte (2012[2*])			
Kukla-Acevedo (2009[2*])	Wronowski and Urick (2019[2*])			
Lee et al. (2023[2*])				

[2] Da'as (2021) is rated 3* for the outcome—teacher job satisfaction and 2* for the outcome—absenteeism.

Appendix 10: A summary of previous, relevant reviews

Authors	Review period	Number of studies	Geographical locus	Key, relevant outcomes	Summary of key, relevant findings
Boyce and Bowers (2018)	1992–2018	109	Mainly United States (US)-based studies	Teacher satisfaction, teacher commitment, teacher retention	• There is moderate evidence that principal leadership behaviour has effects on teacher retention • There is moderate evidence that principal leadership has effects on teacher satisfaction • There is strong evidence of the association between school climate and teacher satisfaction • There is moderate evidence of the association between school climate and teacher commitment and teacher retention rates
Madigan and Kim (2021)	No specificity	24	International	Teacher satisfaction, burnout, and intention to quit	• The study suggests that burnout and job satisfaction have a significant role in predicting teachers' intentions to quit; however, burnout may pose a greater risk than job satisfaction, which may be increasing over time
Billingsley and Bettini (2019)	2002–2017	30	US-based studies	Special teacher attribution and retention	• Special educators struggle with many complex work demands such as caseloads, paperwork, and non-teaching responsibilities. When these demands exceed their capacity to fulfil them, they may be at greater risk for attrition
Brunsting et al. (2014)	1979–2013	23	International	Special teacher burnout	• Teacher experience, student disability, role conflict, role ambiguity, and administrative support were particularly salient factors in special education teacher burnout
Cheng et al. (2023)	1995–2023	67	China	Teacher burnout	• Teacher burnout may result from high work demands and low jobs resources. Teachers' proactive coping strategies could help to reduce burnout
Chin (2007)	No specificity	28	Taiwan and US	teacher job satisfaction	• Transformational school leadership does have positive effects on teacher job satisfaction
Heenan et al. (2023)	2012–2022	15	International	School staff and school culture	• Transformational school leadership is presented as a positive leadership style with a close interconnection between positive impact of transformational school leadership for school staff and for an enhanced school culture

					• An increased motivation in staff and the fostering of more positive school culture were found to be the leading impacts of transformational leadership on school staff and culture
Liebowitz and Porter (2019)	2000–2019	51	US and other high-income, OECD (Organisation for Economic Co-operation and Development)-member countries	Teacher wellbeing, teacher instructional practices, and school organisational health	• There is direct evidence of the relationship between principal behaviours and teacher wellbeing, teacher instructional practices, and school organisational health • The preceding findings are based almost entirely on observational studies because the causal evidence base on school leadership behaviours is non-existent
Nguyen et al. (2019)	No specificity	120	International	Teacher retention and attrition	• Research on teacher attrition has grown substantially over the past decade, both on the factors that are examined as well as the increased specificity and nuanced operationalisation of existing factors • The organisational factors such as student disciplinary issues, administrative support, and professional development have significant influences on retaining teachers in the profession
Palma-Vasquez et al. (2022)	2008–2018	213	International	Teacher mobility	• There are multiple factors associated with teacher mobility, among which the precarious working environment, poor organisational conditions such as lack of leadership and support among colleagues, excessive workload, and low self-efficacy stand out
Scheopner (2010)	1990–2010	33	International	Teacher attrition	• Teacher attrition rates are higher in disadvantaged schools and among early career teachers • ‘Simply increasing teacher salaries is unlikely to result in improved retention rates’. It is important to consider the complex nature of salary and how it influences teachers’ retention intentions
See et al. (2020)	No specificity	20	International	Teacher retention and attrition	• Financial incentives were the only approach that seems to work in attracting teachers to challenging schools, but not effective in retaining them. To keep teachers working in challenging schools, a supportive and conducive working environment would be needed

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The Education Endowment Foundation
5th Floor, Millbank Tower
21–24 Millbank
London
SW1P 4QP

https://educationendowmentfoundation.org.uk

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