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## Rationalising and conceptualising 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 & Danechi, 2022; McLean et al., 2023). Failure to recruit and retain qualified teachers could result in teacher shortage that has a negative effect on student learning (Gerritsen et al., 2016; Sorensen & Ladd, 2018). This challenge is exacerbated in schools with high proportions of disadvantaged students (Tereshchenko et al., 2020).

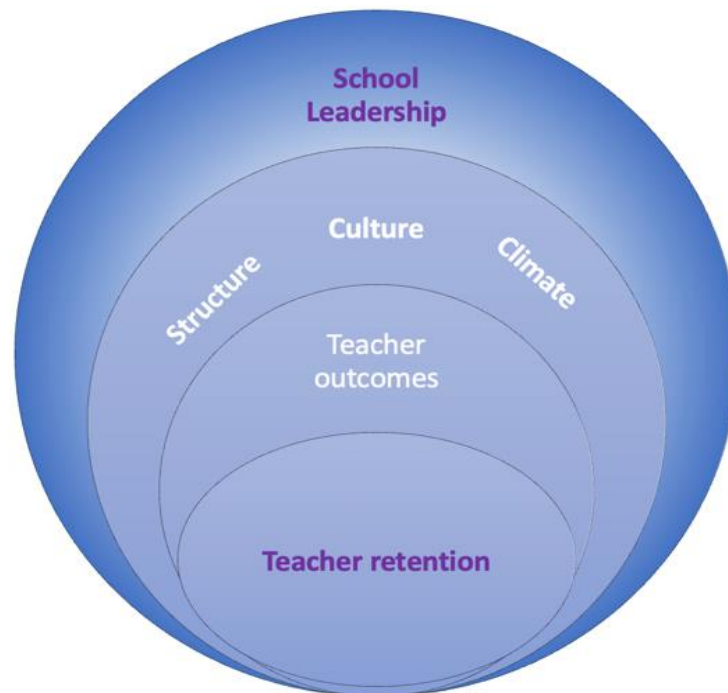
To address this problem, financial incentives could be a temporarily effective approach (See et al., 2020). Beyond this financial approach, research has suggested a multiplicity of other important factors influencing teacher retention such as school leadership, culture, climate, and structure (European Union, 2013; Geiger & 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 currently lack a systematic exploration of the extant evidence base on those characteristics to enable such an understanding. For this reason, we are undertaking 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.

To conceptualise this review, we draw on previous, key work on school leadership, organisational structure, school culture and climate, as visualised in Figure 1.

**Teacher retention (in Circle 4)** is placed in the center of the conceptual framework, to reflect the purpose and focus of this review. Informed by previous work (e.g., Guarino et al., 2006; Kelchetermans, 2017; See & Gorard, 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.

**Teacher outcomes (in Circle 3).** Furthermore, this review considers other teacher outcomes proximally related to teacher retention. These outcomes at the teacher level could include

teacher recruitment, teacher job satisfaction, teacher mobility, teacher well-being, teacher career development, and profession commitment.



**Figure 1.** Conceptualising a review of effective school leadership for teacher retention

**School culture, climate, and structure (in Circle 2).** Drawing on popular conceptualisations (Schein, 1992; Schoen & 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 school culture can be explored at three levels: artifacts (e.g., behaviour patterns, school policy documents), espoused values (e.g., peer relationships), and basic assumptions (e.g., tacit understandings, unwritten rules in managing situations). **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., 2017; Thapa et al., 2013). We define **school / organisational structure** as the approaches or methods to divide and co-ordinate 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.

**School leadership (in Circle 1)** is positioned in the broad circle (see Figure 1) and define this construct 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. This positioning of school leadership is aligned with the previous, major reviews (e.g., Leithwood et al., 2020; Robinson et al., 2008) suggesting the significant influence of school leaders on building school culture, redesigning organisational structure, and various teacher outcomes.

In summary, our conceptual framework suggests:

- that school leadership (**Circle 1**) may have an influence on building school culture and climate and redesigning structure (**Circle 2**).
- that these factors in **Circle 2** may influence teacher outcomes (**Circle 3**).
- and that these teacher outcomes may have mutual influences on teacher retention (**Circle 4**).

## Research objectives and questions

This systematic scoping review aims to develop a framework of and empirically unpack the concept of ‘*effective leadership for teacher retention*’ to inform development and evaluation of interventions on school leadership (development) and teacher retention in schools. We treat ‘teacher retention’ as an umbrella term that covers teacher recruitment, teacher retention, and other teacher outcomes proximally linked with teacher retention, for simplicity of presentation. The more specific objectives (**OB**) of this review are presented as follows.

**OB1.** To clarify the concept of ‘effective school leadership for teacher retention’.

**OB2.** To identify the evidence base of key characteristics on ‘effective school leadership for teacher retention’. These characteristics include promising approaches, processes, practices, and strategies.

**OB3.** To identify and analyse gaps in the evidence base on ‘effective school leadership for teacher retention’.

The review will be guided by the following key research questions.

**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?

## Methodology

This review is best characterised as a systematic scoping review. We will use the latest version of PRISMA-Scoping Review guidelines ([Peters et al., 2020](#), part of [Joanna Briggs Institute \(JBI\) Manual Evidence Synthesis](#)) to guide the process of identifying, screening, and appraising research outputs for this scoping review. The scope of this review has been informed by the research questions, resources, and the timeframe. The following criteria will be used to determine whether a study will be included in the review.

### Inclusion and exclusion criteria for the review

Category	Include	Exclude
<b>Study design</b>	<ul style="list-style-type: none"><li>○ Empirical, primary studies</li><li>○ Reviews of empirical literature</li></ul>	<ul style="list-style-type: none"><li>○ Non-empirical research studies</li><li>○ Narrative reviews</li><li>○ ‘Purely’ bibliometric reviews</li></ul>
<b>School levels</b>	<ul style="list-style-type: none"><li>○ K-12 settings: Primary/elementary, secondary/middle, high schools.</li><li>○ Note: K-12 settings typically include schools for students aged from 5 to 18 and include Multi Academy Trusts.</li></ul>	<ul style="list-style-type: none"><li>○ Nursery schools and kindergartens</li><li>○ Higher education institutes</li></ul>
<b>Population</b>	<ul style="list-style-type: none"><li>○ School leaders</li><li>○ Teachers</li></ul>	NIL

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<b>Types of evidence sources</b>	<ul style="list-style-type: none"><li>○ Peer-refereed journal articles</li><li>○ Other publications including <i>research reports</i>, and <i>books</i> and <i>book chapters</i> drawn from empirical research.</li></ul>	<ul style="list-style-type: none"><li>○ Editorial</li><li>○ Conference papers</li><li>○ Notes</li></ul>
<b>Timeframe</b>	January 2000 – April 2023	Publications before 2000
<b>Content</b>	A research output <b>centrally</b> discusses the core issues around (1) school leadership OR (2) school culture / climate / structure AND (3) teacher retention.	A research output <b>peripherally</b> discusses the core issues of focus in this review.
<b>Geographical locus</b>	Outputs drawn from empirical research in any countries or nations	NIL

### Search strategy for identification of studies

#### Search Systems and databases to be searched:

- Scopus
- The Web of Science
- Google and Google Scholar

The launch of integrated multidisciplinary databases 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 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 will mainly utilise 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 is 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 (iii) finding suggests that Scopus has a more comprehensive coverage of peer-reviewed documents in social sciences (including education) than the Web of Science; (iv) Scopus offers more complete bibliographic data and sophisticated engines to search for and extract data than Google Scholar (Zupic & Čater, 2015). We will conduct a search on **both Scopus and the Web of Science** to strengthen the confidence on the coverage of our review.

Further, we will search for relevant research reports on **Google and Google Scholar** that have not been published in academic journals. Informed by Haddaway et al. (2015), we will look at the first 200 results on Google and Google Scholar 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, will be used for the Google Scholar search.

### Search terms

We will use the following three sets of keywords<sup>1</sup>. While we are conducting a search, we will use these combinations to be consistent with our aforementioned framework for this review. We will (i) run these combinations separately, (ii) combine the search results from all of the separate searches in an Excel file, and then (iii) remove duplicates. This practice will minimise errors in excluding potentially relevant research outputs.

Combination 1. Set 1 AND Set 2.

Combination 2. Set 1 AND Set 3.

Combination 3. Set 2 AND Set 3.

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<sup>1</sup> Three key words of “leadership”, “management”, and “administration” will not be 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.

**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 & 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 focussing on these constructs (e.g., Achstein et al., 2010; Coe et al., 2022; Schoen & 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 & 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”

### **Process of search, screening and assessing eligibility**

Reviewer 1 and Reviewer 5 will take key responsibility for the process of search, screening and assessing eligibility of research outputs. This process will have two stages. Stage 1 will involve screening titles and abstracts. The first 100 results of each combination will be doubled screened. Stage 2 will involve assessing eligibility based on the full texts of the research outputs retained in Stage 1.

## Data extraction and management

We will systematically extract data in Microsoft Excel using a data extraction tool. **Appendix A** provides key information to be included in the data extraction tool.

## Appraisal of included studies

The key aim of this review is to identify evidence-informed characteristics of school leadership, structure, climate, and culture that support teacher retention.

We will use the appraisal tool in **Appendix B** to evaluate the strength the research evidence of the included studies that highlight these characteristics in response to the research questions of this review.

We will use the tool in **Appendix C** to appraise the shortlisted research outputs drawn from analyses of qualitative data that may contribute to an elaboration on these characteristics, for example, through discussing teachers' experiences. We will use the tool in **Appendix D** to appraise the review studies.

Reviewers 1, 2, 3, and 4 will be jointly responsible for appraising shortlisted research outputs. A sample of 10% of the total number of these shortlisted outputs will be cross-checked between the reviewers. All outputs marked "unclear" or "YES to cross-check" will be appraised by two reviewers.

## Data synthesis

We will code and synthesise characteristics of school leadership, culture, climate, and structure that support teacher retention.

We will use descriptive statistics and graphing of trends to identify the bibliometric patterns of publication generation, research contexts, and research approaches.

## Reporting

We will develop a technical report to be published on EEF's website. Following publication of this report, we plan to publish article(s) / book chapter(s) / a book associated with the findings of this review.

## Personnel

**Reviewer 1. Dong Nguyen** – Principal Investigator – is Associate Professor in Educational Leadership and Management at Durham University, UK. Dong Nguyen has conducted and published research studies on school leadership, professional development and learning, and teacher innovativeness. He has led on conducting systematic reviews of the empirical evidence on teacher leadership and professional learning. Dong Nguyen is leading a 3-year funded project to evaluate impact of leadership development programmes for school leaders on teaching and learning outcomes in schools in Rwanda. He is Editor in Chief of the International Journal of Educational Management. Dong Nguyen's key responsibilities for this review project include: funding acquisition, leading the entire project, conceptualising the review, screening, assessing eligibility and extracting data, appraising quality of research outputs, synthesising findings, and writing up a project report.

**Reviewer 2. Beng Huat See** – Co-Investigator – is Research Professor at Durham University, UK. She is currently on the advisory board of EPI for the Nuffield-funded project on the influence of headteachers. Beng Huat is currently leading an ESRC project comparing teacher education policies across OECD and partner, having completed another large project to clarify the important determinants of teacher shortages in England. She is co-leading two other ESRC-funded research projects, looking at improving the selection and recruitment of high-quality teachers and ways to improve the recruitment of ethnic minority teachers in England. Her expertise is in the use of multiple designs: rigorous reviews and synthesis of evidence in education, evaluation of large-scale RCTs and re-analysis of secondary data. She has led 12 large-scale reviews on a range of topics, from recruitment and retention of teachers, influence of school leadership and to parental engagement, impact of arts education, use of technology in schools and effective primary pedagogies. Beng Huat's key responsibilities for this review

project include: contributing to conceptualisation of the review, appraising quality of research outputs, synthesising findings, and contributing to a project report.

**Reviewer 3. Chris Brown** – Co-Investigator – is Professor in Education and Director of Research in the University of Warwick's Department of Education Studies, UK. His key research interests centre on: i) educational leadership; ii) improving education provision through the use of evidence informed policy & practice; iii) Professional Learning Networks (PLNs) as mechanisms for developing and scale-up effective education practice; and iv) approaches to reducing educational disadvantage. Since 2011, Chris Brown has secured some £5m (approx. £5,320,000) in research funding as PI or CI in these four areas. He has authored, or co-authored 86 journal articles and papers, 36 reports/resources and 23 book chapters, and authored, co-authored or edited 20 monographs and books, many of which explore the vital role of school leaders in improving outcomes for teaching and teachers, as well as children and young people. He has also led five systematic reviews in the last five years as well as numerous intervention studies. Chris Brown's key responsibilities for this review project include: contributing to conceptualisation of the review, appraising quality of research outputs, synthesising findings, and contributing to a project report.

**Reviewer 4. Dimitra Kokotsaki** – Co-Investigator – is Associate Professor in student engagement, teacher development and arts education at Durham University, UK. Dimitra Kokotsaki has conducted and published research studies on teacher education and professional development. She has successfully conducted systematic reviews and broader literature reviews in education. Dimitra Kokotsaki has expertise in designing and evaluating educational interventions. She has led the process evaluation of EEF funded projects, such as the IPEELL, the Project-based learning and [the Hallé SHINE and SHINE](#) in Secondaries projects. She has extensive experience in initial teacher education in England. Dimitra Kokotsaki's key responsibilities for this review project include: contributing to conceptualisation of the review, appraising quality of research outputs, synthesising findings, and contributing to a project report.

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**Reviewer 5.** An ad-hoc researcher with expertise and experience in reviews of evidence in education will assist the research team with the process of searching for, screening, assessing eligibility of research outputs, and extracting data.

### Conflicts of interest

No conflict of interest

### Timeline

	Activity	Estimated Completion date
<b>Protocol development</b>	Develop a review protocol	5 April 2023
	Pilot test initial sets of keywords and databases	14 April 2023
	Finalise a review protocol	19 April 2023
<b>Search &amp; screening – based on document titles, abstracts, &amp; keywords</b>	Search on Scopus, the Web of Science, and Google and Google Scholar	19 May 2023
	Citation tracking (checking included studies in the relevant systematic reviews and meta- analyses)	19 May 2023
<b>Assessing eligibility – based on full texts</b>	Perform full text retrieval	23 May 2023
	Conduct full text screening	6 June 2023
<b>Data extraction</b>	Extract data	9 June 2023
	Check data extraction	12 June 2023
<b>Appraisal</b>	Appraise quality of research outputs	26 June 2023
<b>Synthesis &amp; write-up</b>	Develop narrative synthesis	17 July 2023
	Submit EEF draft report	31 July 2023
	Respond to reviewer comments	TBC
	Publish on EEF website	TBC

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## Appendices

Reviewing the evidence base on effective school leadership for teacher retention.

Protocol for a systematic scoping review.

Principal investigators: Dong Nguyen, Beng Huat, Chris Brown, and Dimitra Kokotsaki.

**Appendix A. Data extraction template**

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

**Appendix B. 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 RQ (e.g., RCT)	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., RDD, difference in differences, administrative datasets using pop 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

**Appendix C. Critical appraisal checklist for qualitative research (adapted from JBI)**

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 D. Critical appraisal checklist for reviews of empirical research (adapted from JBI)**

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?			