How can we make teaching attractive and raise the status of teachers?: A review of international evidence

Prof Beng Huat See
Prof Stephen Gorard
Dr Mark Ledger
Dr Rebecca Morris
Dr Nada El Soufi
Kulwinder Maude
Dr Nicole Ivarsson-Keng

BACKGROUND

The teaching profession appears to be in a crisis with growing teacher shortages across many countries in the world, increasing difficulties in recruiting and retaining teachers (Ovenden-Hope 2022). Concerns about the shortage of teachers are not new. What is worrying is that it has now become a global phenomenon with an increasing number of countries reporting difficulties in recruiting and retaining teachers. The ageing teaching population and the ongoing challenges with respect to retaining younger teachers in the profession are a cause for concern even in countries such as Finland, which traditionally do not report a shortage (OECD 2019). The Eurydice report (Birch et al. 2018) highlighted that many countries within the European Union are struggling to attract sufficient numbers of students into initial teacher education. This paper presents the findings of a synthesis of international evidence on ways we can support teacher wellbeing and improve teacher job satisfaction and retention in the profession.

Current approach to addressing the shortage of teachers has often focused on recruitment, for example, through financial incentives (bursaries and scholarships) and increasing pathways into training. However, attracting teachers to the profession is only one part of the solution. One needs to look at retention. It is not good enough to get people into teaching, we need to keep them there. Teacher attrition is a particular problem. It has been argued that teacher attrition is one of the major factors contributing to a shortage of teachers (Fern 2017; Ingersoll, Merrill & May 2012; Sutcher, Darling-Hammond, & Carver-Thomas, 2016). High rates are attrition are experienced in many countries in the world. In England 15% of teachers leave in the first year of teaching, and 31% within their first five years (DfE, SWC 2022). The attrition rate is even higher among secondary school teachers. Of those who qualified in 2010 to 2014, only around 66 per cent stayed on in state-funded schools in the fifth year (DfE, 2020). In the US, around 40 to 50 per cent of new teachers leave within the first five years of entry into teaching (Sutcher et al., 2016). Therefore, to increase the supply of teachers, it is also necessary to address the retention issues. Several factors have been suggested for the high turnover and attrition of teachers. Among them are teachers' pay, job status, working conditions and workload.

Excessive workload or poor work-life balance has been cited in numerous sources as the single most important reason for teachers leaving the profession (CooperGibson 2018; NASUWT 2018; (Long & Danechi, 2022). Recent DfE commissioned reports [MOU1] highlighted that teachers' decisions to leave the profession were generally driven by a combination of factors over a longer period of time. However, for some teachers, there had been a specific 'trigger' point, for example around teaching performance resulting in involvement from the senior leadership team (SLT) or

feeling undervalued after an issue (CooperGibson, 2018; Long & Danechi, 2022, p.6).s

In many educational systems the role of teachers has become increasingly more complex (Hargreaves and Flutter, 2019). Classroom environments have become more diverse with students from different ethnic and social economic backgrounds, and levels of ability. Along with these challenges, teachers have to learn to use and adopt new technologies in teaching often with little or no training. Budget cuts in education and pay freezes in recent years due to the pandemic and economic downturn have led to limited resources and support available to teachers to meet the demands and challenges in 21st century education. Schools are also becoming more bureaucratic, teachers have less autonomy in decision making and greater accountability (Klassen & Chiu 2011). In summary, teachers are now working under extremely tough conditions. All these have added to teachers' workload and stress (Viac & Fraser 2020).

Teachers' perceptions of workload are found to be strong predictors of their decision to leave teaching (Higton et al. 2017; Lynch et al. 2016; Torres 2014). The Cooper-Gibson Research (2018) report based on interviews with 101 former teachers, suggested workload as the most important factor influencing teachers' decision to leave the profession. A survey of 1,200 recently qualified teachers in one institution found that workload was the most commonly cited reasons for leaving or planning to leave (Perryman & Calvert 2020). Of these teachers, 19% left in the first five years of starting their training. These teachers were fully aware of the challenges of workload, but the reality was worse than they had expected. It was not the amount work, but the nature of the workload. This study indicated that it is the culture of performativity and accountability, that added to the workload. Such pressures are among the common reasons given by teachers, especially beginning teachers, for leaving the profession (Ryan et al. 2017; Fuchsman, Sass & Zamarro 2022). In England, the external appraisal by Ofsted (Office for Standards in Education), which rate the performance of schools, school leaders and teachers, has been described by many as punitive (BBC News 2023; The Guardian 2023). This has put additional pressure on teachers. Such potentially punitive accountability system not only deters some from joining the profession, but is also driving out those who are already in (Sims 2016; Dolton & Newson 2003).

However, reducing teacher accountability and workload does not necessarily reduce turnover (Cohen 2005; See et al. 2020). This suggests that it is not the workload nor accountability per se that drives teachers out of their profession. Some studies have highlighted the importance of school environment factors for teacher retention, with school leadership often being viewed as influential in determining the ethos and working conditions within a school. A series of observational studies point to teachers' perceptions of administrative support and leadership as being strong predictors of teachers' intention to leave (Allensworth et al. 2009; Boyd et al. 2011; Marinell & Coca (2013). Johnson, Kraft and Papay (2012) argue that although the working

conditions are generally considered important to teachers and their intention to stay in teaching, it is the social conditions within the school, such as the principal's leadership, school culture and relationships with colleagues—which are most influential.

Teacher shortages are also often attributed to the job prestige and perceived status of teaching, and satisfaction with the profession. These are not necessarily related to how much teachers are paid. Analysis of the international survey of teachers' (TALIS) data showed that in Mexico, only 40% of teachers were satisfied with their pay, but almost all teachers (97%) reported being happy with their job (OECD 2019). In Portugal over 80% of teachers chose teaching as their first choice career even though they were most dissatisfied with their pay. Perhaps, this suggests that those who chose teaching as a career did not do so for the pay. TALIS data showed that only 68% of lower secondary teachers in England were happy with their job compared to 87% for the TALIS average, although teachers were generally happy with their pay.

Perhaps it is not pay alone that makes teaching unappealing. Teachers in England were least likely to think that they were valued by society, policymakers and the media. They were also among the top five countries to report experiencing quite a lot of stress (63% vs the TALIS average of 42%). These data together indicate that perhaps the status or prestige of the profession, job satisfaction and stress associated with teaching may be a partial explanation for the challenges faced in retaining teachers in England.

Instead of thinking of ways to solve the shortage of teachers through financial incentives and workload reduction alone, which have not worked so far, this new study looks at strategies to improve the working environment, mental wellbeing and job satisfaction of teachers. As Andreas Schleicher (Director for Education and Skills, OECD) said: "for teaching and learning to be effective, teachers need to have high levels of wellbeing, self-efficacy and confidence (Schleicher 2018, p. 4). This has a downstream effect on pupils too, not just in terms of academic performance, but may also encourage some to consider teaching in the future.

Teacher wellbeing

Addressing teacher wellbeing is thus an important strategy against teacher attrition. Teacher wellbeing has now become a priority concern in many countries (Schleicher 2018). In England teacher wellbeing and mental health is now an education policy priority with the publication of the Education Staff and Wellbeing Charter in 2021, which pledged to support teachers' wellbeing by addressing workload and embedding wellbeing in training and professional development of teachers. Internationally, OECD countries have acknowledged the importance of teachers' wellbeing and working conditions. Teachers' wellbeing was one of the main topics of discussion in the 2018 International Summit on the Teaching Profession (ISTP). England's Ofsted (2019)

reiterated the UK's Health and Safety Executive's claim that 'teaching staff and education professionals reported the highest levels of work-related stress, depression and anxiety in Britain'. Attention is now focused on teachers' workload, working conditions and mental health in a bid to keep teachers in the profession.

The OECD analysis on teacher wellbeing indicates that in almost all countries and across phases of education, teachers who report a great deal of stress are more likely to report wanting to leave the profession (Viac & Fraser 2020). And some studies have shown that early career teachers are particularly vulnerable to stress (Harmsen et al. 2018). Analysis of data from the Beginning Teacher Longitudinal Study (BTLS) showed that early career teachers who were more at risk of stress were twice as likely to leave the profession within 4 years (McCarthy et al. 2020).

Previous studies have shown that there is a downstream effect of teacher wellbeing on student wellbeing and academic outcomes (Carroll et al. 2021). The international Programme for International Assessment (PISA) survey showed a strong link between teacher wellbeing and student wellbeing (Viac & Fraser 2020). When teachers are functioning well, they benefit not only themselves, but also their students. There is evidence that teachers who have a positive relationship with their students and colleagues are happier with their job, and students whose teachers are content with their job also feel happier (Klassen, Perry & Frenzel 2012; Zee & Koomen 2016; Collie, Shapka & Perry; Spilt, Koomen & Thijs). Therefore, establishing strong-teacher-student and collegial relationships not only benefits students' wellbeing, but also teachers' well-being, which in turn, leads to greater motivation and satisfaction, and thus higher probability of staying on in the job.

Although interventions to address this issue are imperative, rigorously evaluated studies of interventions targeting teacher mental health are limited in England. One such example, is the WISE study (Evans et al. 2022) aimed at secondary school teachers which proved to be largely ineffective in improving teacher mental health as it failed to address convincingly the complexities of the school context in terms of multiple staff needs, workload and system culture. The authors concluded that future teacher mental health interventions need to focus on not just skill training but also building support for whole school elements that tackle the systemic drivers of the problem.

A main challenge in research on teacher wellbeing is the broad range of concepts associated with mental wellbeing and the ambiguities and inconsistencies with the definitions and the labels for interventions across studies. But the consensus is that it is a multidimensional and subjective concept, with overlapping components. Wellbeing is also a dynamic and temporal concept. A person's wellbeing can change over time and under different situation. It can only represent the

individual's mental state at the point of measurement. There is also the issue of lack of objective measures of wellbeing. Most research in this area is based on self-reports which can be influenced by an individual's mood, memory, and biases, thus subject to measurement errors. To address these challenges, many researchers have used standardized wellbeing scales and indices to measure physical health, mental health, work/life satisfaction and social relationships. The OECD framework for measuring individual wellbeing included 11 dimensions, broadly classified as material conditions (this measures an individual's wealth, earnings and housing) and quality of life (health, living conditions, work-life balance and subjective wellbeing (OECD 2015). These indicators can be distinguished as objective wellbeing (conditions observed by other people) and subjective wellbeing (conditions reported by the individual themselves).

In terms of teachers' occupational wellbeing, most existing studies, including those in this review are focused on measuring dimensions of wellbeing (McCallum et al. 2017). Van Horn et al. (2010) identified five dimensions of teachers' wellbeing, these being affective well-being; social well-being; professional well-being; cognitive well-being and psychosomatic well-being. Collie et al. (2015) suggested including teachers' workload, organisational climate (teachers' perceptions of school leadership, school culture towards teachers and teaching) and student-teacher interaction in assessing teachers' work-related wellbeing. Day et al. (2007) classified teacher wellbeing in three groups: 'situated' (i.e. it is influenced by the school or classroom context), 'professional' (where teachers' wellbeing is influenced by factors related to their profession, e.g. accountability), and 'personal' (factors outside their work, such as family and social factors). While teachers' wellbeing is also affected by factors outside the school, what Day et al. (2007) call "personal factors", these are outside the influence of education policies. For this reason, studies on teachers' wellbeing often do not consider these factors.

For the purpose of this review, we will include studies that consider all aspects of teacher work-related wellbeing that can be influenced by interventions, government policies and school leaders' practices. These include:

- Physical wellbeing (includes psychosomatic symptoms like, insomnia, muscle spasm, headaches, raise blood pressure and hyperventilation, loss of appetite and fatigue, concentration)
- Social wellbeing (e.g. feelings of trust or valued by colleagues and principals)
- Affective wellbeing (positive affect includes positive emotions, such as feeling of joy, happiness, depression and contentment, while negative affect refers to feelings of sadness, fear, anger and anxiety)
- Occupational wellbeing (job satisfaction, self-efficacy)

These factors may overlap, and terms may be given different labels in the literature. For

example, some studies (Van Horn et al. 2010; Schleicher 2018a, Mostafa and Pál (2018) consider self-efficacy and job satisfaction as cognitive wellbeing, which they define as teachers' belief in their own abilities to perform. These beliefs can influence the amount of effort teachers put into their job, and how long they persist in teaching. Affective wellbeing is also sometimes referred to as mental wellbeing.

These dimensions of wellbeing are deemed salient to teachers' persistence in teaching. Therefore, interventions or practices that can support these aspects of teachers' wellbeing have potential to influence teachers' decision to stay in teaching.

However, poor well-being is not the only reason teachers might consider leaving their jobs. Working conditions—such as the quality of leadership support; relationships with colleagues; feelings of safety, order, and discipline; and pay—are all strong predictors of teacher turnover (Ingersoll, 2001; Johnson, Berg, and Donaldson, 2005; Kraft, Marinell, and Yee, 2016). The problem we have in addressing the issue of teacher retention through wellbeing, job satisfaction and working conditions is that these are all inter-related and may be outcome factors. For example, wellbeing and job satisfaction could be an outcome of working conditions, and wellbeing could be an outcome of job satisfaction. According to Locke (1969), job satisfaction is a measure of mental wellbeing, the result of an individual's perception of their work performance (self-efficacy).

Working environment

Improving the school working environment, making teaching an enjoyable and rewarding profession is, one way to make teaching attractive. A positive working environment promotes teachers' job satisfaction, which contributes to teacher wellbeing, and enhanced status of the teaching profession (Toropova, Myrberg & Johansson 2021). Teachers who are satisfied with their job are less susceptible to stress and burnout (Kyriacou 2001; Skaalvik & Skaalvik 2009) and vice versa, and more likely to stay. This, in turn, can reduce the likelihood of teacher turnover.

There is ample research evidence pointing to the strong correlation between working conditions, teacher wellbeing and teacher attrition (Geiger & Pivovarova 2018; Wang et al 2015). International research evidence shows that the diminishing status of teaching as a profession combined with poor or inadequate working conditions leads to teacher attrition overtime (Borman & Dowling, 2008; Ingersoll & Smith, 2003). Burge, Lu & Phillips (2021) argued that although pay and rewards may temporarily improve retention, workplace characteristics (workload, school culture and teaching environment) are important influence on teachers' decision to stay or leave. Improving teachers' working environment, therefore, can potentially address teacher turnover.

Research by the Department for Education [DfE] (2017a, 2018b) indicated that the workload associated with teaching is the biggest cause of attrition in the profession. In addition to that, teaching environment was found to be the most important factor to influence retention issues. Other studies have found that poor pupil behaviour in school leads to higher workloads for teachers, higher levels of stress and reduced well-being levels, which negatively affects teacher retention (DfE, 2018a; Williams, 2018; Ofsted, 2019).

Leadership support

Closely related to school working conditions is school leaders' practices and administrative support. Previous studies have highlighted the importance of school environment factors for teacher retention, with school leadership often being viewed as influential in determining the ethos and working conditions within a school. There are many studies conducted in the US on the role of working conditions in teachers' retention (Borman & Dowling 2008; Ingersoll 2001; Johnson, Kraft & Papay 2012). These have all shown the crucial role of leadership support/administrative support in influencing the working environment of the school. They set the tone, culture, climate/ethos of the school. They protect teachers from external pressures.

Analysis of the Teaching and Learning International Survey (TALIS) dataset indicates a close association between teachers' job satisfaction and the school leadership, which in turn, reduces the odds of teacher turnover (Sims 2017). Administrative and leadership support in schools for teachers in the early stages of their careers and continuing professional development for established teachers are deemed important factors in teacher retention. A systematic review by See et al. (2020) also points to the importance of improving school cultures and ethos in influencing retention.

While school climate and working conditions are generally important factors in teacher job satisfaction (Toropova et al.2021), Johnson, Kraft and Papay (2012), argue that it is the social conditions which is part of the working conditions that are most influential. These conditions are very much influenced by principal's leadership, which can affect the relationships teachers have with their colleagues.

In a comparative international study, Blomeke, Houang, Hsieh, & Wang (2017) concluded that beginner teachers' commitment to stay was most influenced during the transition from teacher education into the job. Leadership quality, perceived appraisal and workload (generic and subject) were seen to be the key driving forces in their decision making. Ronfeldt & McQueen's (2017) analyses of three separate waves of first year teachers reported that those who received support from leadership were nearly 50% less likely to leave their positions in the early years of

their careers.

Observational studies have also pointed to teachers' perceptions of administrative support and leadership as being strong predictors of teachers' intention to leave (e.g. Allensworth et al. 2009; Boyd et al. 2011; Marinell & Coca 2013). Sims' (2017) analysis of the 2018 TALIS data showed that better school leadership is associated with higher job satisfaction for teachers and a reduction in teachers' likelihood of leaving. Ronfeldt & McQueen's (2017) analyses of the combined SASS, TFS and BTLS data showed that a supportive communication with school leadership had the biggest the biggest impact on teacher retention, reducing the odds by 55% to 67%. It, therefore, follows that professional development of school leaders to equip them with the knowledge and skills to create a supportive school culture may improve teachers' job satisfaction and retention.

Job satisfaction

As discussed above, improving teacher retention calls for efforts to address teachers' working conditions, which in turn, requires school leaders' support. All these have implications on teachers' job satisfaction and overall school cohesion and enhanced status of the teaching profession (Toropova et al. 2021). Job satisfaction is an ambiguous concept (Evans,1997). It can mean different things to different people at different times depending on their individual circumstances (e.g. experience, competency, self-efficacy) and environmental circumstances. Some of these circumstances are more important or affect some teachers more than others (Skaalvik & Skaalvik, 2009). It can be temporal, for example, if teachers have a particular rough day either at work or at home, they may be less satisfied with their job. This is a problem with measuring job satisfaction. Skaalvik & Skaalvik (2009) suggest that job satisfaction is not about how teachers feel at a particular moment in time, but as a general overall feeling of contentment and enjoyment or conceptualized job satisfaction as teachers' general feeling and enjoyment with one's work. Job satisfaction is also sometimes construed as occupational wellbeing.

Herzberg et al. (1957) defined job satisfaction as being generated by motivating factors, such as recognition/appreciation, responsibility, work advancement, and personal growth. Herzberg's hygiene factors include organisational policy and administration, interpersonal relationships, working conditions, status, and security (Herzberg, 2015). Job satisfaction correlates strongly with teacher retention. Teacher turnover decreases when job satisfaction is high (Ladd, 2011).

A positive working environment promotes teachers' job satisfaction, which contributes to teacher wellbeing, and enhanced status of the teaching profession (Toropova, Myrberg & Johansson 2021). Teachers who are satisfied with their job are less susceptible to stress and burnout (Kyriacou & Sutcliffe; Skaalvik & Skaalvik 2011) and vice versa, and more likely to stay. This, in turn, can reduce the likelihood of teacher turnover.

This paper summarises the results of a systematic review of international studies on interventions or factors to improve teachers' job satisfaction, working environment and teacher wellbeing.

METHODS

The aim of this review was to identify promising approaches in improving teachers' job status, job satisfaction, their work environment and mental wellbeing. Accordingly, the research questions were:

1. What works in enhancing the status (image) of teaching?
2. What are the most promising approaches to improving teachers' wellbeing/mental health job satisfaction among teachers?
3. Do school leadership practices and organisational climate have any impact on teachers' teacher wellbeing, workplace satisfaction and retention?

The review was conducted in three stages:

Identification of literature

The first step was to identify literature relevant to the research questions. A set of keywords or syntax was developed to help with the search. The keywords included terms relating to status, self-esteem, self-efficacy, job satisfaction and working environment. As the research questions are causal, the keywords also included causal terms.

> intervention OR initiative OR incentive OR policy OR scheme OR plan OR leadership OR mentor* OR effect OR impact OR correlation* OR comparative OR quasi-experiment* OR experiment* OR longitudinal [abstract]
>
> AND
>
> teacher OR educator OR instructor OR "in-service teacher"[abstract]
>
> AND
> prestige OR status OR "social status" OR image OR well-being OR "mental health" OR "job satisfaction" OR self-esteem OR morale OR "school environment" OR "working environment" OR "professional development"

OR “selection of candidates” OR “value accorded to teachers”

These were first tested on the Web of Science search engine to see if they were sensitive enough to pick up relevant pieces of literature and studies already known to us. After a few adjustments, they were then
applied to the usual educational, psychological and sociological databases (EBSCOhost and Web of Science). EBSCOhost includes ERIC, British Education Index, Applied Social Science Index Abstract, and PsycInfo). As the topic was about mental health and wellbeing, we also searched PubMed and Medline. To ensure that unpublished reports or grey literature were not missed, we also searched ProQuest Dissertations and Google Scholar. This is good practice to avoid publication bias. The search terms had to be adjusted according to the idiosyncracies of the databases.

Screening
Because of the large number of hits from each databases, we sorted the records by relevance.

We did a quick screen by titles and abstracts and if the next 10 pages contain no more relevant articles, the search stopped. Identified studies were then exported to EndNoteX9 and screened for duplicates (using the Find Duplicates function) and relevance, on the basis of their title and abstract. Only studies that appeared to be related specifically to the research questions were retained. To facilitate the screening, we developed a list of inclusion and exclusion criteria using PICOS (population, intervention, comparison, outcomes and study design) framework. Studies were included if they were:

- about school teachers (not school leaders or teaching assistants) in mainstream state-funded /government schools
- they included an intervention or initiative to improve teacher status, working environment, wellbeing or job satisfaction of teachers
- had a comparison/control group or before and after comparison
- they had measurable outcomes
- were empirical (i.e. research with analysis of data)
- published or reported in English

Studies were excluded if:

- they were not about teachers in regular state-funded schools (i.e. special schools, independent fee-paying schools, hospital schools or pupil referral units)
- they were not about mainstream classroom teachers (e.g. if they were about school

leaders or teaching assistants)

- they were not about school teachers (e.g. higher education teachers or other professions)
- they relate only to specific groups of teachers, e.g. special education teachers or ethnic minority teachers
- they were about student achievement or student wellbeing
- they were not about strategies or policies to improve job satisfaction, status school climate/working environment or teachers' wellbeing)
- they were simply descriptions of programmes or initiatives with no evaluation of the impact of the approaches
- they were not empirical
- they were just anecdotal accounts from schools about successful strategies
- they were studies that have no clear evaluation of outcomes
- they were not primary research (i.e. intervention manuals, opinion pieces or promotion literature, guidance briefs or manuals on how to improve the stated outcomes
- they were not published or reported in English

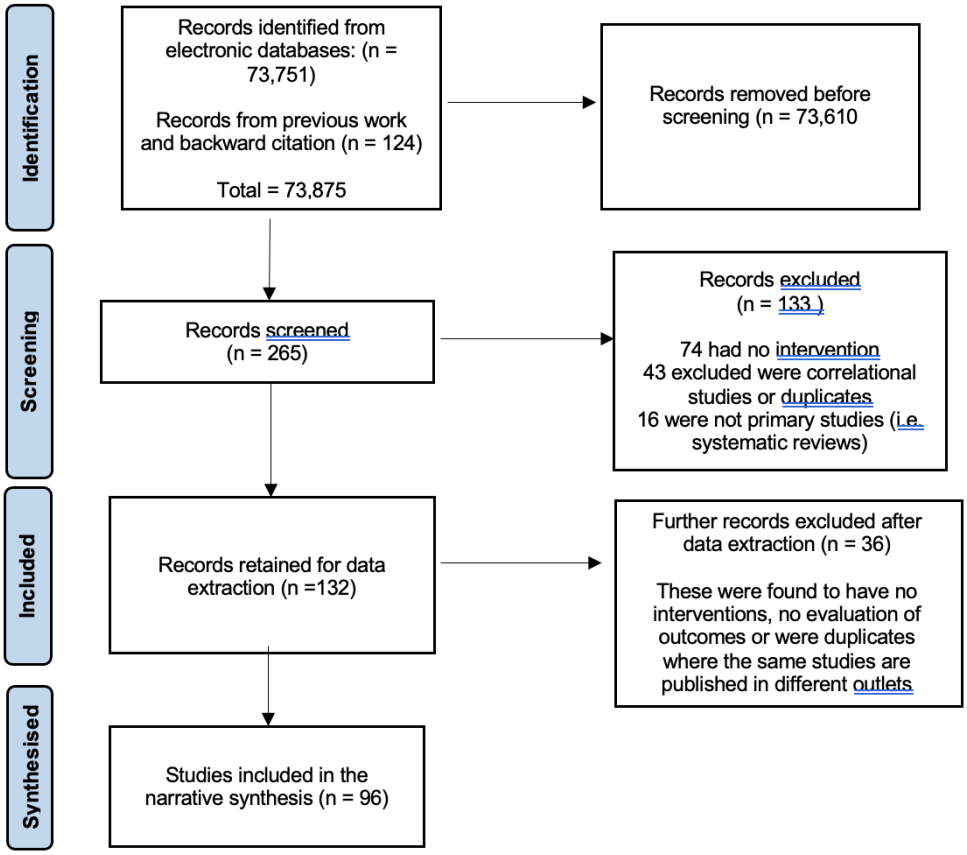
We intentionally did not set any date limiters to keep the search as broad as possible to ensure that no relevant materials were missed. A large number of studies involving surveys or comparisons before and after with no comparison groups were included, but would be rated low in quality. Although they may be eventually excluded in the analysis, we included them in the discussion as they may suggest some interventions that can be tested.

Table 1: Number of records identified from each of the databases and number exported to EndNote

Databases	No. of records identified	No. of records exported to EndNote
PubMed	2,910 records	33
Medline	2,928	15
Web of Science	22,523	47
EBSCOHost	45,242	15
Google Scholar	31	31
From other sources	124	124
Total	73,875	265

The Prisma flow chart (Figure 1) traces the number of records from identification to synthesis.

Figure 1: Prisma flow chart



Data extraction

To facilitate judgement of the strength of the evidence, we developed a coding template, based on the 5 criteria in the Gorard 'sieve'. We also developed codes for the types of intervention and outcomes. Around 5% of the studies were coded by at least two of the authors first independently, and then their coding and ratings were compared. When discrepancies arose, the authors conferred and arrived at a consensus decision.

Key information from each included study was then extracted using the template below. The information extracted is to help to understand the intervention/approach and to justify the strength of the evidence. We describe the codes used to characterize study features below:

Aim of the study

Brief statement about what the study is about. A little description of the strategy (intervention)

Method:

Research design:

- Is it cross-sectional (e.g. survey/interview at one time point)
- Is it a randomised controlled trial
- Is it a quasi-experiment (no randomised allocation to control conditions)
- Does it have a control and comparison group
- Does it have pre- and post- event comparisons
- Is it longitudinal, is it a cohort study or combination of some of these
- How is randomisation or other allocation to groups carried out

Sample

- Size of sample
- How are the samples identified, and allocated?

Attrition

- Response rate (if survey or interviews)
- Level of attrition or missing data

Outcome measures

- What are the outcomes and how are they measured?

Analysis (if relevant)

- How data is analysed and reported?
- How is the performance of treatment and comparison groups compared?

Findings

- Author's results, e.g. positive or no effects and the effect size (if available)
- Reviewers' analysis of the results (re-calculate effect size if not estimated or if in doubt).

Evidence:

Comment on aspects of the study that may threaten or enhance the internal and external validity of the findings. These could include size of sample, level of dropout, fidelity to treatment, quality of counterfactual, extraneous/confounding variables, other programmes going on that may have affected the results, misleading use of simple before

and after figures and conflicts of interest.

Quality assessment

The included studies are then assessed for weight of evidence using the Gorard 'Sieve" (Gorard, 2021, Table 2) based on five criteria: the design, scale of study, scale of missing data, quality of data obtained and other threats to validity. Each study is awarded a star ranging from 0 (evidence from the study is too weak to be reliable) to 4* (the most robust that could be expected in reality). These criteria are a judgement of the quality of evidence, which refers to the security of the findings and not necessarily the quality of the research.

The sieve is to be read from left to right and top to bottom, starting with the research design. As the research questions are causal, the strongest design for a causal question would be a randomised control trial. These will be rated 4*. Moving across the scale, if the RCT has a large sample in each arm for example, over 100, then it stays at 4*. It will drop to 3* if it is a small scale study, e.g. under 10 in each arm (underpowered). Moving along to the right, if there is no or low attrition, then it remains at 3*. If there is high attrition, e.g. over 15% then it drops a star to 2* and so on.

Quasi-experimental studies (e.g. matched comparisons using propensity score matching, difference-in-differences, regression discontinuity) will be rated slightly lower (3*) as the groups compared may not be completely equivalent, and other confounding factors or unobserved variables cannot be accounted for. Similarly, if the study has a small sample, it drops a star, and a further star is dropped if there is a high level of attrition.

The ratings can only move downwards and not upwards. For example, if the study has no comparators or if the groups are not randomized, then it starts with 3* and remains at 3* even if it has a very large sample and low attrition.

To ensure inter-rater reliability, four members of the team reviewed and rated a sample of 10 papers. Team members met to discuss each piece to come to a consensus. This is to ensure consistency of rating across studies. During the synthesis stage the team leader revisited some of these pieces if there are any doubts about the scoring based on the information extracted.

Table 2: Criteria for judging the strength of research evidence

Design	Scale	Dropout	Data quality	Threats	Rating
Strong design for RQ	Large number of cases (per comparison group)	Minimal attrition, no evidence of impact on findings	Standardised, pre-specified, independent	No evidence of diffusion, contamination, or other threat	4
Good design for RQ	Medium number of cases (per comparison group)	Some attrition (or initial imbalance)	Pre-specified, not standardised or not independent	Little evidence of diffusion, contamination or other threat	3
Weak design for RQ	Small number of cases (per comparison group)	Moderate attrition (or initial imbalance)	Not pre-specified but valid in context	Evidence of diffusion, contamination or other threat	2
Very weak design for RQ	Very small number of cases (per comparison group)	High attrition (or initial imbalance)	Issues of validity or appropriateness	Strong indication of diffusion, contamination or other threat	1
No consideration of design	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

Because of the dearth of experimental studies in some areas, for example, developing leadership to improve school climate, we have included correlational studies especially if they were large studies which analysed administrative datasets. We have also included some with no comparison groups, but these were rated lower in terms of strength of evidence.

RESULTS

An overwhelming majority of the studies included in the review appear to be about interventions

to address teachers' wellbeing and mental health. This is likely because it is easier to conceive of interventions to support teacher wellbeing and mental health than to improve job status and prestige and working environment, although supporting wellbeing can enhance job satisfaction and thus retention.

Teaching is often associated with high levels of stress (e.g. Greenglass & Burke 2003; McCarthy et al. 2020; Redin & Erro-Garcés (2020), and teachers who experience greater work-related stress tend to have lower job satisfaction, commitment to teaching and thus a stronger desire to leave the profession (Green 2014; Klassen & Chiu 2011; Skaalvik & Skaalvik 2011). Therefore, it makes sense that improving the job satisfaction and wellbeing of teachers can potentially improve the status of the profession and retention.

While there are no interventions as such to improve teacher status, improving the working conditions of teaching and empowering teachers are suggested as ways to enhance the professional status of teachers (Whittaker & Moses 1995).

Figure 2 summarises the conceptual framework of teacher wellbeing interventions. All the studies in this review appear to highlight the central role of teacher wellbeing. Therefore, at the core of the framework is wellbeing. Supporting teacher wellbeing is essential for enhancing teacher job satisfaction and retention.

One main challenge in conducting this review was the rather eclectic range of interventions, research designs and measurements. Most of the studies in this review involve the use of psychological interventions to support individual mental wellbeing. We broadly classify these interventions that address teacher job satisfaction and wellbeing as:

- *Coping and stress interventions*

  These include mindfulness training, yoga, transcendental meditation and emotional regulation
- *Psychological interventions*

  These include positive psychology, gratitude intervention
- *Organisational interventions*

  School leadership and organisational climate
- *Professional development*

  Training, coaching and mentoring that supports teaching activities and classroom management

These four approaches are aimed at improving teachers' working conditions, empowering

teachers and their self-efficacy and strengthen their coping strategies, which in turn, lead to better wellbeing, greater job satisfaction and likelihood of staying on in teaching. Emanating from the findings from this review, we develop a conceptual framework of factors influencing teacher wellbeing, which in turn, influences teacher's satisfaction with their job. Put together, wellbeing and job satisfaction have a high propensity to support teacher retention.

Figure 2: Conceptual framework of teacher wellbeing interventions to improve job satisfaction and teacher retention

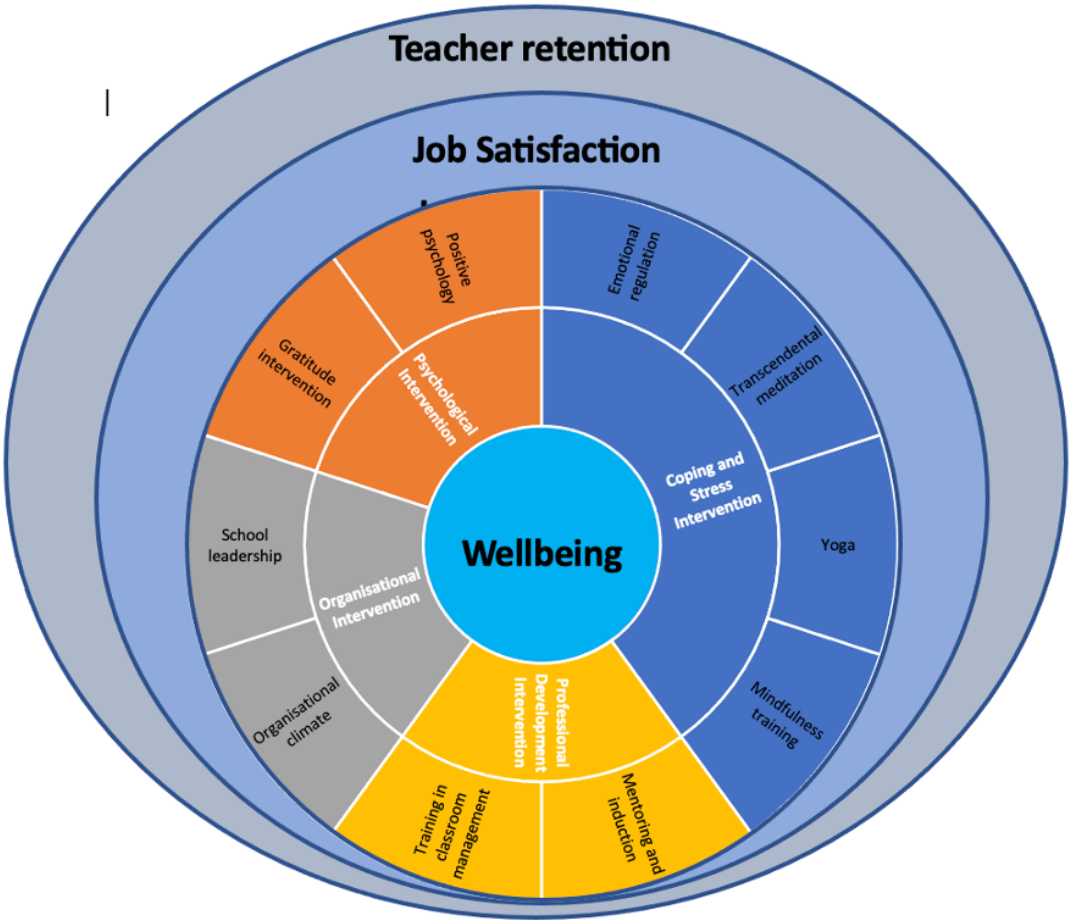


Table 3: Summary of results of studies and their quality ratings (96 studies reporting 98 outcomes)

	Mindfulness (n = 34)	Psychological (n = 15)	Leadership practices and organisational climate (n = 28)	Improving school climate (n = 9)	Mentoring and CPD (n =12)

4*	-	-	1 - 1 positive		
3*	1 (mixed)	-	3 - 2 positive - 1 mixed	1 - 1 no effect	1 - 1 mixed
2*	13 - 5 positive - 6 mixed - 2 no effect	4 - 2 positive - 2 mixed	12 - 10 positive - 2 mixed	1 - 1 no effect	3 - 1 positive - 1 mixed - 1 no effect
1*	11 - 9 positive - 1 mixed - 1 no effect	7 - 3 positive - 3 mixed - 1 no effect	12 - 10 positive - 2 mixed - 1 no effect	4 - 2 positive - 1 mixed - 1 no effect	6 - 2 positive - 3 mixed - 1 no effect
0	9 - 6 positive - 3 mixed	4 - 3 mixed - 1 no effect		3 - 2 positive - 1 mixed	2 - 1 positive - 1 no effect

COPING AND STRESS INTERVENTIONS

Coping and stress interventions include mindfulnesss training, yoga, meditation and emotional regulation. Mindfulness is the most commonly used coping and stress intervention for addressing stress and its associated issues, such as anxiety, anger, depression and sleep disorder. It is a difficult term to define as it has been described as a way of being, an awareness of the present, an experience and a practice – all characteristics that are difficult to measure. According to Kabat-Zinn, the developer of mindfulness stress reduction, its practice is rooted in Buddhist philosophy that involves paying attention to the present moment, intentionally and non-judgmentally (Baer & Geiger 2013). Mindfulness training (MT) is experiential in nature and involves guided mindfulness, yoga practices and group discussions, home practices and homework assignments.

The training activities typically focused on the cultivation of teachers' abilities to direct and sustain attention intentionally and nonjudgmentally on present-moment physical and mental experience in the form of bodily sensations, feelings, mental images, and thoughts through specific (Kabat-Zinn 2009).

Mindfulness-based interventions are typically delivered in a group format. This promotes mutual support and provides a safe communal environment. Studies have shown that collegial social support can enhance self-efficacy (Brouwers et al. 2001; Chan 2002; Loera et al. 2013; Watts 2014), and supports teachers to cope with stress (Klassen & Chiu 2011).

The 2018 TALIS survey of OECD and partner countries (OECD 2018) shows that teachers spent an average of only 7% of their teaching day collaborating with their peers (e.g. teamwork and dialogue with colleagues). Such collaborative work serves as opportunities to foster social support among teachers. Mindfulness-based interventions are therefore deemed appropriate for teachers.

Of the studies that address teachers' mental wellbeing, 45% (n = 34) were about mindfulness training (Table 4). The results are quite mixed. No high quality studies were found. The majority reported positive effects, most of which are rated 1* and below. Five of the positive studies were rated 2*.

Table 4: Intervention- Mindfulness training/ yoga/meditation/emotion regulation (n = 34)

Strength of evidence	Positive (n = 21)	Mixed/inconclusive (n =7)	No/negative
4*			
3*		· Roeser et al. 2013 (on some measures but not others and no long term effect	
2*	· Crain et al. 2017 · Hwang et al. 2019b · Latino et al. 2021 · Montero-Marin et al. 2021 · Roeser et al. 2022	· Hwang et al. 2019a (small effect, no LT) · Jennings et al. 2019 (no LT effect, no effect on self-efficacy) · Jennings et al. 2013/2014	· Jennings et al. 2017 · Kidger et al. 2021

		· Peterson 2021 · Schoeps et al. 2019 · Wolf et al. 2015	
1*	· Beshai et al. 2016 · Flook et al. 2013 · Pérez-Escoda et al. 2012 · Schnaider-Levi et al. 2020 · Siu, cooper & Phillips 2014 · Tarrasch, Berger & Grossman 2020 · Tyson et al.2009 · Wong et al. 2009 · Zadok et al. 2021	· Reiser & McCarthy 2018	· Kyriazopoulou 2021
0	· Carroll et al. 2021 · Hepburn et al. 2017 · Schussler et al. 2016 · Lang et al. 2020 · Matos et al. 2022 · Taylor 2018	· Dave et al. 2020 · Gold et al. 2010 · Larson et al. 2018	

**34 studies reporting reporting 37 outcomes. Two studies (Jennings et al 2013/2014) were treated as one. Roeser et al. 2013 reported on two types of outcomes, so considered separately.*

Nine of the stronger studies rated 2* and above showed mixed results or no effects (three of which were by the same authors) including one suggesting no effect. The narrative synthesis will discuss only those studies rated 2* and above. Summaries of studies rated 1* and below can be found in the Appendix. We describe those that reported mixed results first, then those that showed positive effects.

The only 3* study **(Roeser et al. 2013)** showed mixed effects of mindfulness training. Positive results were found for self-report measures (2*), but no effects on direct measures on teacher absences, blood pressure and heart rates. (3*). The authors conducted two randomised wait-list trials of a mindfulness training programme looking at its impact on the occupational stress and burnout of 113 primary and secondary school teachers in Canada (n = 53) and the US (n =55). The intervention was an 8-week, 11-session programme where teachers met for a total of 36 contact hours. A range of pedagogical approaches and activities were used to foster mindfulness and self-compassion. Stress and burnout were measured using validated instruments that assessed mindfulness, occupational burnout, self-compassion, anxiety and depression. More direct measures such as physiological indicators of stress, salivary cortisol, blood pressure and heart rate, and teacher absences from work were also collected. The results showed positive effects on mindfulness (d = 0.79), occupational self-compassion (d = 0.85). At 3-month follow up the positive effects were maintained although no further progress was made between end of programme and 3-month follow up. Teachers also showed improvements in attention and working memory and reported reduction in occupational stress, anxiety, burnout and depression. Lower levels of cortisol were recorded at post-programme (Cohen's *d* =.22) and follow-up (Cohen's =.20). However, there was no change in teachers' blood pressure at post-programme and at 3-month follow up. No substantial change in number of days absent either. This study was rated 2* for evidence on wellbeing as the measures were based primarily on teacher self-report. Thus, cannot rule out social desirability especially since the participants were volunteers who are motivated and interested to sign up for the programme. The programme may not be as effective to the general public school teachers, who needed the programme most.

The same study, reported in another paper **(Crain et al 2017**), also suggested positive results on quality and pattern of sleep, work and home satisfaction, and improvement in moods. A more recent paper by the same authors **(Roeser et al. 2022),** also a wait-list randomised controlled trial examines the effect of a mindfulness program on the well-being of teachers in addition to their mindfulness, self-compassion, occupational health and quality of interaction with students. The training included mindfulness meditation, emotion theory, practice of compassion, etc. This

was a much smaller study, including only 59 teachers. Compared to the control group, the experimental teachers showed greater occupational self-compassion and less job stress and anxiety at post-programme and follow-up. They also experienced less emotional exhaustion and depression at follow-up.

Hwang et al. 2019a evaluated the impact of a mindfulness intervention known as *Reconnected* on teachers' wellbeing and teaching-related outcomes (job satisfaction, self-efficacy, student-teacher relationships). This was a school-based cluster randomised control study involving 185 teachers from 20 schools across all phases. Ten schools were randomised to receive mindfulness training and 10 to business-as-usual. Attrition was 2% from the intervention group and 17% from the control. Reconnected was a 8-week mindfulness based intervention designed to work on teachers' mindfulness, self-compassion, perceived stress and emotion regulation. The programme included a range of experiential, physical and everyday exercises, e.g. yoga, walking, eating, breathing and empathetic listening. Training was delivered outside school hours, individually and in groups on a weekly basis, with each session lasting 90 min. Participants also received reminder emails about what they have learnt, along with links to video clips and audio recordings. The intervention was effective in improving teachers' self-reported wellbeing-related outcomes but not teaching-related outcomes. Most of the variance in teacher outcomes could be explained by the teachers' pre-mental health state. The intervention adds little to improvements in outcomes (perceived stress, mindfulness, self-compassion, and emotion regulation). At 6-week follow up positive effects on wellbeing outcomes were maintained after controlling for pre-intervention state, but no effect was detected at immediate post-intervention. There was no long-term effect on teaching related outcomes.

Jennings et al. conducted 4 studies (one was a replication) of *Cultivating Awareness and Resilience in Education (CARE)* programme - a mindfulness-based professional development programme designed to reduce stress, promote social emotional competence and improve teachers' performance and classroom learning environments. The CARE programme combines emotional skills, mindfulness awareness and compassion building activities. The programme was delivered over 5 days of training each lasting 6 hours (total 30 hrs). Participants received a workbook and audio recordings of mindful awareness practices to facilitate home practice. Teachers were offered a series of three one-on-one coaching phone calls during inter-session periods. Participants were also scheduled three support calls over the course of program delivery averaging 26 min each. Coaches followed a scripted protocol designed as a semi-structured interview based on motivational interviewing focused on three topics: self-care practice, supporting teachers to maintain practice and apply learning to classroom situations and supporting teachers to apply CARE skills and knowledge.

The earlier study **(Jennings et al. 2013)** was a 2-year feasibility study using an RCT design to examine the impact of CARE on teacher efficacy, wellbeing, burnout/time pressure and mindfulness. 50 teachers teaching different phases (primary, middle and secondary) were randomly assigned to CARE or wait-list control. Participants were first matched on characteristics and then one of each pair was then randomised to either treatment or control. This reduces power as it means the number of cases is now 25 rather than 50. Pre-post measures on a battery of self-report Likert scale tests were used to assess impact. The study reported significant improvements in teacher wellbeing, efficacy, burnout/time-related stress, and mindfulness compared with controls. Overall impact is positive (ES = +0.23). This could be driven by large impacts on some of the measures, e.g. self-efficacy. But there was no impact on emotional exhaustion, acting with awareness and being non-judgemental, and negative impact on depersonalisation. This was rated 2* because of the small-scale, paired randomisation, and doubts about the validity of some of the sub-scales. Mindfulness training is supposed to reduce stress, so using mindfulness training to measure mindfulness, which is about metacognitive awareness, non-judgemental awareness, openness and curiosity, may not be an appropriate way of assessing the impact on stress.

The 2014 study **(Jennings et al 2014)** is a replication of the earlier study. Participants included 51 teachers (attrition 7%) who were randomly assigned to receive CARE intervention or wait-list control. Wellbeing was measured using a combination of instruments for anxiety, physical symptoms, sleep disturbance, perceived stress burnout, emotional regulation and mindfulness. All were Likert Scale self-report instruments. Results are mixed. Improvements were seen in wellbeing, but not on perceived stress, distress tolerance and self-efficacy. These results differ from the previous study. For example, there was no significant effect on instructional efficacy in the current study, but positive effect on positive affect, which was not found in the previous study. The authors did not provide any explanation why this might happen. But it does cast doubts on the reliability of these measures.

In a later study**, Jennings et al. (2017**) reported on an efficacy trial using cluster RCT involving 224 teachers from 36 elementary schools. Randomisation was first at school level then teachers within schools. Attrition between pre- and post-test was 6%. 118 teachers were assigned to CARE and 106 to wait-list control. The outcomes were measured via a battery of self-report instruments. The results show programme impact on the factor, but not individual sub-scales within the factor. The positive effects for the factor may be driven by the strong effects in a couple of the subscales. For all the factors, effects were found for only 2 of the 5 or 6 of the sub-scales. Overall, the intervention did not show promise. Long term effects could not be established. The reduction in psychological stress and improvements in social and emotional competence may fade away once the intervention is removed. If the intervention worked, these

effects should remain as they would have been trained to deal with the stresses of work.

A later study by the same author **(Jennings et al. 2019)** looked at the long-term impact of CARE on teachers' social competence and wellbeing, following up on the programme 9.5 months later. The authors reported CARE teachers showed continued significant decreases in psychological distress, reductions in ache-related physical distress, continued significant increases in emotion regulation and some dimensions of mindfulness, no long-term effect on mindfulness, Time Urgency and teacher self-efficacy. Experimental teachers showed a decline from post-test to follow-up, while control teachers continued to make progress. Effect was greater for teachers with higher levels of psychological distress at baseline. Attrition was 12.9% between pre-test and follow-up. Teachers volunteered participation, so results may not generalise to other samples. Effects are generally positive, but small. Outcome measures were based on self-report, and teachers were not blinded to intervention. Some measures were also closely aligned with the intervention. It is clear from the four studies that mindfulness training does not support teacher self-efficacy, and there was no long-term impact on mindfulness although some positive long-term effects were seen in some subscales of stress outcomes.

Three studies reported negative effects. **Kidger et al. (2021)** evaluated the effectiveness of the *Wellbeing in Secondary Education (WISE)* intervention, a school-based programme to improve teachers' wellbeing through mental health support and training. It comprises three components: 8% of teachers were trained in mental health first aid for schools and colleges; (2) 8% of staff were trained in standard mental health first aid and then formed a confidential support service for their colleagues; and (3) all teachers were given a 1-hour training session on how to look after their own and others' mental health. The study was an intention-to-treat cluster RCT with repeated measures of outcomes involving 25 schools (12 intervention and 13 control) and 1428 Year 8 teachers (of whom 1357 were deemed eligible) in the SW of England and Wales. Of these 1182 completed baseline questionnaire at baseline, but 1722 teachers were included in the primary analysis. There were more teachers at T2 than the number at baseline, suggesting that the teachers at each wave may not be the same teacher. But assuming that the initial number of teachers was 1428, a total of 657 were excluded, meaning that the attrition could be 46%. Results showed no effects on teacher wellbeing and mental health. Although both groups improved in wellbeing, the results suggest that the intervention group made less progress in wellbeing measures and had higher rates of absence. This indicates that the intervention can be potentially harmful. It is possible that the teachers in the intervention group were more aware of the signs and symptoms on mental disorders, leading them to take time off. One limitation reported by authors was the lack of blinding. This was rated 2* because the sample is large and comparison groups were randomised, but downgraded to 2* because the sample size is difficult to ascertain and there was a high level of missing data.

Another study evaluated a wellbeing programme focused on training in emotional skills and emotional intelligence **(Schoeps et al. 2019**). This was a quasi-experimental study where 340 teachers were assigned to either an experimental or a control group. The training consisted of five sessions (two hours each), conducted over three months in groups of 15 to 20 teachers each. Control teachers received only a textbook or digital material about social emotional learning. Data on wellbeing were collected three times: before the training (T1), after the training (T2), and at six-month follow-up (T3). The results were mixed. Positive effects were observed for burnout syndrome (exhaustion, indolence and guilt), life satisfaction and self-esteem, but no overall effect on emotional symptoms (anxiety and stress) although experimental teachers had lower levels of depression than control teachers. Not all measures were maintained at 6-months follow up.

Wolf et al. (2015) evaluated a social-emotional wellbeing programme involving 153 primary school teachers in Katanga, Congo. This was a cluster randomized control trial with a wait-list control design. The programme was a curricular and social-emotional teacher professional development intervention. The purpose was to enhance teachers' wellbeing and instructional practices in reading, math, and social-emotional learning. This involved equipping teachers with high-quality reading instructional practices and scaffolded lessons plans. Teachers were provided with a Teacher Guide and a Model Lesson Plan Bank which scaffolds teachers throughout the school year to be able to teach reading and wellbeing lessons and to create their own lessons. The study reported significant increase in job dissatisfaction in female teachers but not male teachers. Increase in motivation was observed among the least experienced teachers. A main limitation of the study was the self-reported measures of the outcomes.

Another stress management and prevention intervention is *Transcendental Meditation (TM).* It differs from mindfulness training, in that it does not require participants to focus on the present situation in a non-judgemental way, but simply to allow the mind to restful alertness. **Peterson (2021)** examined the effects of Transcendental Meditation (TM) on the wellbeing (experience of stress and burnout) of 62 bilingual teacher leaders of colour who were randomly assigned to TM or wait-list control. Teacher leaders are teachers who take on additional responsibilities to support students and other teachers. The intervention (TM) involved twice daily practice of meditation for 20 minutes each time. Treatment teachers met once a week for 3 weeks, then once a month for 3 months. The paper reported reductions in negative wellbeing, e.g., emotional exhaustion, perceived stress, anxiety, depression, anger and fatigue. Effects on vigour (-0.87) and positive thoughts (-0.93) were negative, yet the author concluded that it was an improvement. Results for teacher self-efficacy were not reported although there were pre-test scores for it. There were no follow-up measurements, so the long term effect of this intervention could not

be ascertained. This was rated 2* because of the small scale and the odd reporting of results.

Five of the 2 * studies reported positive effects of mindfulness training. Two of them have been discussed above (Crain et al. 2017; Roeser e tal. 2022) as they are part of the same study that also reported mixed results. **Hwang et al.'s (2019b)** cluster RCT tested the effects of an 8-week mindfulness-based intervention on teacher wellbeing (perceived stress, self-compassion and emotion regulation). Participants were 60 teachers from 6 schools. Schools were randomised to either treatment or control. Three teachers from the intervention group and nine from control dropped out (20% attrition). The intervention was conducted over 8 sessions of 90-minutes each delivered weekly after school. The training included reflection, discussion, and facilitator-led didactic activities. Teachers learned mindfulness and self-compassion through a variety of experiential, physical, and everyday exercises. The study reported positive effect on mindfulness (ES = 0.55), self-compassion (ES = 0.46) and reduction in perceived stress (ES = - 0.66). The small sample randomised at school level and the unbalanced attrition plus the fact that the assessment questions are very similar to the intervention, reduced the strength of the evidence to 2*.

In another experimental study, **Montero-Marin et al. (2021)** compared the effectiveness of mindfulness training led by an instructor with that which was self-taught. This was a cluster RCT involving 206 secondary school teachers in England with 43 schools randomly assigned to either condition. The intervention was an 8-week programme. For self-taught mindfulness, teachers were given a course book (M-FP book) to read, and they had to complete associated activities which emphasised mindfulness practices. They also had access to a publicly available app. The instructor-led training was based on William and Penman (2011) M-FP manual. Training was delivered in-person in groups of 3 to 9 teachers – one session per week lasting 90 mins each. Both groups showed progress between pre- and post-intervention, but compared to the self-taught group, the instructor-led teachers made greater progress on all the measures (wellbeing, self-compassion, perceived stress, depression and burnout. For both groups, the more they practice the stronger the effect. As there was no pure control group, it was difficult to say conclusively whether teachers receiving mindfulness training have performed better than no intervention.

Another form of mindfulness training is Yoga. **Latino and colleagues (2021)** evaluated the impact of an 8-week yoga-based physical exercise program, delivered twice a week for 60 minutes per day. This was a quasi-experimental study where 40 teachers were recruited, based on reported signs of stress and emotional discomfort. They were matched and then randomly assigned to an experimental group (N=20) with a 60-minute yoga training and a control group (N=20) with a 60-minute nonspecific physical training. It is unclear how participants were matched and on what characteristics. The analysis showed that the intervention reduced emotional exhaustion (ES = -

1.42) and depersonalization (ES = -1.41), and improved teachers' mindfulness (ES = +3.09) and personal accomplishment (ES = +1.27). The large effect sizes are probably because the mindfulness measures assessed teacher's perceived level of consciousness and body experience, which is what teachers were taught to do in their yoga training. This disadvantaged the control teachers as they have not been trained to do these.

What is the evidence on mindfulness training on teachers' mental health and wellbeing?

In summary, the evidence on mindfulness training and emotion regulation on teachers' mental health and wellbeing is inconclusive. The stronger studies suggest mixed results. Positive changes were seen on some measures or subscales of stress outcomes, but not others. The stronger studies suggest no long-term impact and no impact on self-efficacy. Where objective and more direct measures are used (e.g. heart rate and blood pressure, and physical symptoms), the intervention does not show any positive change in these measures (Roeser et al. 2013; Jennings et al. 2017). Most of the studies reported positive effects on self-reported measures, which are often constructs taught in the training (E.g. Five-Facet Mindfulness instrument and self-compassion).

One of the biggest challenges in evaluating wellbeing interventions is the large number of constructs being measured. Depending on what constructs are measured, the conclusions can be different. For example, using psychological distress or generic quality-of-life scales as a proxy for mental wellbeing outcomes will lead to different results than if only measures of mental wellbeing were included.

There is also evidence that mindfulness training may have potentially adverse effects on some individuals (Farias & Wikholm 2018). Compared to other activities or treatments, such as relaxation or psychoeducation, mindfulness-based interventions did not lead to better outcomes. Meta-analysis of randomised clinical trials showed improvements in some area, e.g. depression, anxiety and pain, but no effect on stress reduction. Our review also showed no consistent positive benefits of mindfulness training.

PSYCHOLOGICAL INTERVENTIONS

Another group of interventions with potential to enhance teacher wellbeing are those that focus on the psychology or the state of mind of the individuals. They are defined as *"activities or groups*

of activities aimed to change behaviours, feelings and emotional states" (Van Agteren 2021). These include Cognitive Behavioural Therapy (CBT), Acceptance and Commitment Therapy (ACT) and Positive Psychological Intervention (PPI). Mindfulness training (described above) is also a kind of psychological intervention. But in this review, we separate these two kinds of interventions. We consider psychological interventions as those that the researchers specifically identified as a psychological approach, e.g. positive psychology, cognitive behaviour therapy.

As with mindfulness interventions, there are no high quality studies. The evidence of psychological approaches on teachers' mental wellbeing is still quite immature. The strongest studies, rated 2*, suggest beneficial effects. Of the four 2* studies, two reported positive results (Table 5) and two showed mixed results.

Table 5: Intervention - Psychology/gratitude/positive psychology (n = 15)

Strength of evidence	Positive	Mixed/inconclusive	No/negative
4*	-	-	-
3*	-	-	-
2*	· Cook et al. 2017 · Rahm & Heise 2019	· Dreer 2020 (no LT effect) · Sottimano et al. 2018	
1*	· Braeunig et al. 2018 · Critchley & Gibbs 2012 · See et al. 2023	· Chan 2013 · Ifelunni et al. 2022 · McCullough 2015	· Unterbink et al. 2010
0	-	· Bradley et al. 2018 · Brick et al. 2021 · Brown 2016	· Chan 2010

Cook et al. (2017) tested the efficacy of the *Achiever Resilience Curriculum (ARC)* using a block

controlled randomised trial. ARC is a training programme that combines training in mindfulness, value clarification, gratitude practices and sleep hygiene on teachers' job-related stress, self-efficacy and intentions to implement evidence-based practices. ARC was designed to train teachers in specific skill, habit and routines (referred to as resilience practices). It is based on theories related to positive psychology, cognitive behaviour therapy and mindful psychotherapy. ARC includes 8 practice areas focused on helping teachers to learn skills and habits that will enhance their resilience. The training was delivered over five weeks, one session per week, each lasting two and a half hour sessions. The study reported positive effects on wellbeing, which is a composite measurement of job satisfaction, perceived stress and teacher self-efficacy. The participants were 44 secondary teachers who volunteered. Teachers with similar stress pre-test scores were paired up, and one of each pair was then randomly assigned to either ARC or attention-control condition to receive ARC later. The control group also attended professional meetings to discuss instructional and management practices to control for placebo effect. ARC appears to have positive effects on all measures of teacher wellbeing: decrease in perceived stress (ES = 0.7), improvement in job satisfaction (ES = 0.61) and improvement in teaching self-efficacy (ES = 0.65).

In a longitudinal study, **Rahm & Heise (2019)** evaluated the impact of a positive psychology intervention (PPI) on the subjective wellbeing of teachers. The intervention involved one training day, 2 booster sessions and practice exercises before, during and after the meetings. Total intervention time was 10 hrs face-to-face time and about 3 hrs of home exercises, stretched over a 5-week period. During the training, the conditions and consequences of positive and negative emotions and well-being, emotion regulation, time management, savouring and gratitude and the application of positive psychological interventions (like Three Good Things) were explained. Outcomes were measured using Likert Scale instruments for positive/negative stress, burnout, perceived stress, satisfaction with life, general self-efficacy and Locus of Control. Participants were 106 teachers from three institutions (including a grammar school, vocational school and university) in Germany. Attrition was 16%. Compared to the control group, greater improvements were reported in positive wellbeing (positive emotions, satisfaction with life and self-efficacy), while negative wellbeing was reduced (negative emotions, perceived stress and emotional exhaustion). Effects were maintained 5-6 months after the end of the training. However, because groups were not randomised (those who indicated interest first formed the experimental group), the evidence of effectiveness may be due to differences in the dispositions of the two groups rather than the intervention itself.

See et al. (2023) reports on a quasi-experimental feasibility study of teacher trainees to estimate the effects of the Leadership Alphabet of Disposition Development Engagement and Reflection (LADDER) intervention, based on principles of reflective practice and cognitive-behavioural

approaches. Coaches/mentors use probing questions to facilitate the teacher through self-reflection to help teachers identify their strengths and stressors. Coaching was first delivered as a group, where all the student participants attended a coaching session given by expert trainers, followed by one-to-one sessions with the teacher trainer/mentor. Coaching was delivered just before school placement to prepare teacher trainees for the challenges of school. Both groups improved in self-efficacy, but the LADDER group showed bigger improvements (effect size = +0.51). For mental wellbeing, the comparison group showed a decline, while LADDER students showed improvements (effect size = +1.24). There was also a positive effect on trainees' intention to stay in teaching (ES = +0.46). Students commented about how the training has supported them in handling the heavy workload during their school placement. This study was rated 1* because of the very small number (n =14) and the non-equivalent comparison groups.

The other 2* studies showed mixed effects. **Dreer (2020)** tested the efficacy of a positive psychology intervention on the wellbeing (defined as job satisfaction, emotional exhaustion and teacher engagement) of 309 German in-service teachers from different phases of education. Of the 309 teachers, 197 were randomly assigned to intervention group and 112 to the placebo group (31% attrition at immediate test and 42% at follow-up post-test). The intervention comprises a series of 6 positive activities designed to encourage positive thinking and positive behaviour relevant to their work environment. These were emailed to teachers over the course of 2 weeks. The control group received digital cards with positive messages and instructions to read and ponder on them – also emailed to them over the course of 2 weeks. The results showed positive effects on job satisfaction (ES = +0.12), but the effect was not sustained. Similarly, teacher engagement improved, but stagnated between immediate and follow-up post-test for the intervention group, while control teachers continued to make progress. However, impact on teachers' emotional exhaustion was positive and maintained at follow up.

Sottimano et al. (2018) evaluated a multi-level intervention, which included psychological counselling, psychosocial intervention plus either a reconfiguration of the working environment, such as changing space, light and furniture (experiment 1) or vocal training with a speech therapist (experiment 2). This was a cluster RCT involving 27 preschools (n = 324 teachers), where schools were randomly assigned to experimental 1 condition, experimental 2 condition or control. 20% of participants dropped out. The results were mixed – positive impact for some outcomes but not all. Compared to the control group, both experimental groups showed improvements in enthusiasm toward work and a reduction in psychosocial exhaustion, but those with additional speech training made bigger progress. Only the group with a change in working environment showed a reduction in indolence and stress. There was no effect on guilt and work ability. The psychological and psychosocial intervention did have a positive impact on organisational climate. Management was more trusting and teachers had better relationships

with one another. This was rated 2* because of the school-level randomisation, thus reducing power and also of the level of attrition.

Most of the studies rated 1* or below were those with no comparison groups or comparing individuals who responded differently to the interventions (e.g. Braeunig et al. 2018; Bradley et al. 2018; Brick et al. 2021; Brown 2016; Chan 2010, 2013; McCullough 2015) or had very small samples (See et al. 2023), such as comparing one school against another (e.g. Critchley & Gibbs 2012) or comparing only those who complied (Unterbink et al. 2010).

What is the evidence on psychological interventions on teacher wellbeing?

In summary, the evidence for the use of psychological approach to addressing teacher wellbeing is weak because of the large number of measures used for assessing wellbeing resulting in inconsistent outcomes. Measures are largely based on teachers' self-report. There is also no strong evidence that such interventions had lasting effects. It is also noted that there is a lot of overlap between psychological approaches to mental wellbeing and mindfulness training.

ORGANISATIONAL INTERVENTIONS

School leadership practices and organisational climate have often been suggested as factors that can impact on teacher wellbeing, workplace satisfaction and retention. The practices or strategies identified by the studies in this review included professional development of school leaders, supportive leadership styles, collaborative decision making, clear communication, creating a positive organisational climate and mentoring and support programmes, recognition and rewards and professional growth opportunities.

The evidence in this area is generally weak because of the nature of the research design. Most of the studies on school leadership are correlational based on principals' report of their own leadership practices and teachers' report of job satisfaction and intention to stay. Experimental studies examining the impact of school leaders' professional learning training on their leadership practices and teacher outcomes and student achievement are almost non-existent.

Only one 4* study was found (highest rated study in this whole review). This finding confirms those of the correlational work that professional development of school leaders can help create a supportive school culture, enhance collegial collaboration among colleagues and reduce teacher turnover. Professional development generally involves coaching or mentoring through workshops. Although principals may attend conferences or participate in one-off workshops,

they are neither intensive enough to garner improvement nor discrete enough to evaluate (Herman et al. 2017).

Twelve studies were rated 2* and all but two reported positive impact of leadership on teachers' wellbeing and job satisfaction (Table 6). Although they are correlational, they are large-scale studies using administrative data. But the correlational design meant that we could not be certain of the direction of causation. For example, it is possible that teachers who are satisfied with their job are more likely to view their principals positively. Likewise, those who experience depression and anxiety are less likely to see their principals as supportive. Unless principals are randomly selected to be trained in different leadership styles, then the direction of causation cannot be certain. Hence, they are not rated higher than 2*. For the purpose of this review, we report only on those outcomes related to teachers, i.e. not student achievement.

Table 6: Intervention - School leadership and organisational climate (n = 28 outcomes)

Strength of evidence	Positive	Mixed/inconclusive	No/negative
4*	· Jacob et al. 2015 (teacher turnover)		
3*	· Jacob et al. 2015 (teacher collaboration) · Boyd et al. 2011 (admin support)	· Ladd 2011 (mixed, not for middle and elementary. School students' ethnic composition more predictive)	

2*	· Ford, Urick & Wilson 2018 · Grissom, 2011, 2012 · Grissom & Bartanen 2019 · Ingersoll 2001 · Pagán-Castaño et al. 2021 · Ronfeldt & McQueen 2017 · Shen 1997 · Sims 2017 · Sims & Jerrim 2020 · Stang-Rabrig et al. 2022	· Wu et al. 2006 (positive effects on only some aspects of occupation and personal stress) · Player et al. 2017 (predicts turnover, but not attrition)	
1*	· Allensworth et al. 2009 · Cheng 1996 · Herman et al. 2021 · Johnson, Kraft & Papay 2012 · Liu, Yang & Huang 2021 · Marinell & Coca 2013 · Peer 2012 · Suleman et al. 2021 · Weiss 1997 · Zhang et al. 2021	· Klecker & Loadman 1996 · Semarco & Cho 2018	

Because only a small number of studies met our inclusion criteria, we discuss the weaker 1* and 0* studies where relevant as well as they may suggest areas for future research.

School leadership practices

The only 4* study suggested a combination of practices**. Jacob et al. (2015)** evaluated the Balanced Leadership Professional Development Program (BLPD), a 2-year professional learning programme. This is the only randomised control study where 126 principals in Michigan's rural schools were randomly assigned to BLPD Program or to a "business as usual" control group. Twenty treatment schools declined to continue participation after randomisation (attrition 28%), but intention-to-treat analysis (ITT) meant that teacher turnover data was available even for schools that did not participate. The programme emphasises five key practices for effective principals: shaping a vision of academic success for all students; creating a climate hospitable to education; cultivating leadership in others; improving instruction; and managing people, data, and processes to foster school improvement. Principals were taught four strategies for improving practices: knowing what to do, how to do it, and knowing when to do it. Case methodology approach was used throughout, and principals reflect and discuss real life problems faced and how they would apply it to their school context. Altogether 74% of principals attended all the 20 programme sessions. Survey questionnaires were administered to collect data on school climate and teacher collaboration. Teacher turnover was collected from Michigan Department of Education. There was a small effect on teachers' perceptions of principals' leadership and instructional climate (ES = +0.02 to 0.07). Teacher reported slight improvements in collaboration with colleagues (ES = +0.06). There was a positive impact on principal turnover (16% point) and teacher turnover (5% point) using ITT analysis. Considering only those that received the treatment, the effect was even bigger (a 7-percentage point reduction for teachers and a 23-percentage point reduction for principals). Principals and teachers in treatment schools were significantly more likely to remain in the same school over the 3 years of the study than staff in control schools. Overall, there was no impact on student achievement. Results for turnover was rated 4* because the data was taken from administrative data including all teachers and principals in the project, while the evidence for the teachers' perceptions of collaboration is rated 3* because it was based on self-report and the high rate of attrition. But the use of ITT analysis mitigates against the risk of bias due to attrition, hence it remained at 3*. As the intervention is multi-component, it is not possible to say which of the 5 practices is most effective. Perhaps, it is not one, but a combination of practices (balanced leadership) that is needed to bring about positive results.

Wu et al. (2006) tested two occupational stress intervention strategies (one at an organisational level and one at an individual level) on the occupational stress of middle teachers. Occupational stress was measured on 3 dimensions: occupational stress, psychological strain, and coping resources using the Occupational Stress Inventory. Work ability was assessed using the Work Ability Index. Organisational level intervention was focused on adapting the individual to the

environment, reducing sources of stress that are inherent in the workplace, while the individually oriented intervention was focused on relaxation techniques, cognitive coping skills and work/lifestyle balancing skills. Participants were 961 teachers from 8 middle schools China (n = 459 intervention; n = 502 control). Four schools were randomly assigned to the intervention group and four to the control group (it is not clear if this was ad hoc randomisation or statistical randomisation). Results showed positive effects on 4 key occupational stress measures except for teachers' perception of the relevance of their skills and experience to job requirement and role ambiguity. There was also positive effect on teachers' interpersonal relationships, but no effect on psychological and emotional and physical wellbeing. Teachers also showed improvement in self-care and rational coping compared to control. The results suggest that the two interventions combined were effective in reducing some aspects of occupational and personal stress. This was rated 2* because schools rather than individual teachers were randomised, reducing the sample size to 8 clusters. Because 2 strategies were used, it was not possible to tease out the effect of one from the other.

Large-scale correlational studies using administrative datasets have also highlighted the importance of school environment factors for teacher retention, with school leadership often being viewed as influential in determining the ethos and working conditions within a school. Working conditions is a very broad term and can include many factors, such as student characteristics, staff relations, student behaviour, school resources and facilities, leadership/administration or school management and school safety.

Other research similarly suggests that support from administrators has the potential to influence a host of working conditions, such as the amount of autonomy or control teachers have on decision making (see Johnson, 2006). A series of observational studies point to teachers' perceptions of administrative support and leadership as being strong predictors of teachers' intention to leave, where a supportive leadership is seen as one where principals and other school leaders make teachers' work easier and help them to improve their teaching. It can take variety of forms, from providing teachers with professional development opportunities to protecting them from the pressure of accountability (Hirsch & Emerick 2007). Analysis of UK Household Longitudinal Study data and the National Foundation of Educational Research (Teacher Voice survey (Worth & Van den Brande 2020) showed the teacher autonomy (control over their professional development goals) is most strongly related to teachers' job satisfaction, their perceptions of workload manageability and intention to stay in the profession.

Numerous studies have been undertaken in the US using large administrative datasets, e.g. School and Staffing Survey (SASS) to examine the correlation between teachers' perceptions of

working conditions and their intention to leave. An advantage of these administrative datasets is that they are nationally representative, but can be subjected to common-source bias where teachers who intend to leave might be more negative about their working conditions. Similarly, those who plan to stay may respond more positively about their working environment (Boyd et al. 2011). The same teachers when surveyed at a different time might respond differently even if the working conditions remain the same. This can exaggerate or distort the correlations between working conditions and retention behaviours.

Some have linked this dataset with the Teacher Follow-up Survey to look at actual retention. Others have looked at the responses of the same teacher at different time-points to address the issue of common-source bias. Even so there can still be bias when multicollinearity is present. For example, teachers who reported greater satisfaction with teaching were more likely to report more positive school working conditions and less likely to leave. When there is multicollinearity, it is difficult to determine the relative contribution of each predictor variable in a regression analysis. Moreover, any relationship can only be correlational and not causal. Therefore, such studies can only be rated 2* at most unless they address the issue of multicollinearity.

One way to address this problem is to ask teachers in the same school about working conditions in the school and follow-up the career decisions of other teachers in the same school. But this works only if other events are kept constant, e.g. having same school leader, no new policy or curriculum change or reforms.

To address such issues, **Boyd et al. (2011)** surveyed 4,650 first year teachers in New York City in the spring of 2005 (over 70% response rate), and a follow-up survey of those same teachers a year later. They then matched these teachers' responses with the district administrative data and examined the responses of teachers in the same school about working conditions in the school and the career trajectories as well as the retention behaviour of all other teachers in the same school including those who responded to the survey. Using multinomial logistic regression they analysed the relationships between teachers' decision to leave and six contextual factors (teacher influence, administration, staff relations, student characteristics, facilities and safety). The defined effective administration as one that is fair, supportive and consultative, involves teachers in making decisions and is effective in dealing with outside pressures.
Their analyses showed that the strongest predictor of teachers' intention to leave is teacher assessment of administrative support. The follow-up survey analysed teachers who have left. They found that among teachers who left, 10% found their principals to be exceptional in communicating respect or appreciation for teachers, encouraging teachers to change teaching methods if students were not doing well, working with teaching staff to solve school or departmental problems, encouraging staff to use student assessment results in planning

curriculum in instruction, or working to develop broad agreement among teaching staff about the school's mission. Job dissatisfaction was the top reason given for leaving or wanting to leave, and the reason for the dissatisfaction appears to be teachers' perceptions of administrative support.

Allensworth et al. (2009) analysed data from teacher personnel records from 2003/04 to 2006/07 of 24,848 teachers in Chicago Public Schools. Teacher records were linked with the teachers' schools. The results show that principal leadership and teacher cooperation are good predictors of staff stability. Teachers are more likely to stay in schools with a positive, collegial and collaborative culture - where there is a positive, trusting and working relationships with colleagues, strong sense of collaborative responsibility and commitment to improve school. They are more likely to stay in schools where teachers perceive principals as strong instructional leaders who provide direct support to their practice and where they are given opportunity to take part in school decisions. This study was rated 1* because of limitations of the data, which did not distinguish between those who left for retirement reasons or laid off, school closures or cut backs, and those who left due to dissatisfaction with the school or leadership. They were all treated as having left school. Those who left for retirement reasons or being laid off did not do so because of job dissatisfaction or dissatisfaction with the school/leadership. Hence this study was rated only 1*.

Unlike Allensworth et al. **Ingersoll (2001)** distinguished between those who left (leavers), those who moved schools or districts (movers) as well as voluntary and involuntary turnover (retirements, layoffs and terminations). Using multiple regression analysis he analysed data from SASS and TFS surveys to examine the effects of school organisational climate on teacher turnover controlling for school and teacher characteristics. The reasons for dissatisfaction differs between those who leave the profession and those who move schools. Among the top reasons given for teachers who move school were lack of administrative support and poor salary. For those who leave the teaching profession completely, it was the low pay, low student motivation and lack of administrative support and school discipline. He finds that teacher attrition is higher in schools with low salaries, limited staff input into school decision making, poor support from the school administration, and many student discipline problems even after controlling for student composition, school level, and school location. He argues that organisations and by extension, principals who protects academic freedom, job security and allows teachers to express disagreements were more successful in retaining teachers. (2*)

Shen (1997) also used the 1990–1991 SASS and 1991–1992 (TFS) follow-up survey data of 3,612 teachers to examine the relationship between school leadership (specifically, school administrators being aware of staff members' problems) and teacher autonomy (specifically,

teacher's influence over school policies) on teacher retention decisions. Like Ingersoll (2001), Shen also distinguished responses from three types of teachers: stayers, movers, and leavers. Direct discriminant function analyses were conducted to compare the three groups of teachers Shen finds a similar positive correlation between school leadership and teacher retention. Leadership practice that empowers teachers, including them in decision making, that is supportive of teachers' work and incentivise teachers working in schools with high proportion disadvantaged children was highlighted as important determinants of teachers' retention decisions. 2*

Marinell and Coca. (2013) analysed the New York City Dept of Education (NYCDOE) human resource records from the past decade to examine the pattern of turnover of middle school teachers. Data was from a survey of 4,000 middle school teachers and indepth case studies. 50% of middle school teachers left in the first 3 years. The study showed that teacher turnover is lower in schools where principals are perceived as trusting, supportive, knowledgeable instructional leader and efficient manager good at maintaining in school. They foster high levels of order, teacher collegiality and give teachers professional control. These were all important to teachers' decisions to stay or leave. The authors acknowledged that the correlational nature of the research makes it difficult to determine the direction of the relationship between turnover and teachers' report of school climate, but the findings point to inclusive leadership, supportive and collaborative rapport among teachers, and safe and orderly student environments as key factors contributing to school climate and teacher retention. (1*)

Johnson, Kraft and Papay (2012) examined the relationship between teachers' working conditions including interpersonal relationships and organisational contexts and teachers' satisfaction and career intentions. Using data from the statewide survey of school working conditions in Massachusetts, they found that teachers in schools with a positive school context are more satisfied and plan to stay longer in schools after controlling for student demographics. Specifically, they found that while working conditions generally appear to be important to teachers and their future career plans, it is the social conditions—such as the principal's leadership, school culture and relationships with colleagues—which are most influential. The study included over 70,000 teachers. Because they excluded schools with over 60% non response and also teachers who did not complete all questions about working conditions, the results are therefore biased. This study is therefore rated 1*

Ford, Urick & Wilson (2018) analysed the 2013 Teaching and Learning International Survey (TALIS) to examine the relationship between supportive teacher evaluation system in school and teacher job satisfaction. Teacher evaluation system is one aspect of school leadership. Using multiple regression analysis, the results showed that independently, teacher's perceptions of the

school climate, teacher-student relationships and collaborative decision making were also strong predictors of teacher job satisfaction. Controlling for teacher and school characteristics and working conditions, the study found a small, positive relationship between the perceptions of supportive teacher evaluation experiences and U.S. secondary teachers' satisfaction after among lower secondary teachers in the US. This highlights the importance of a supportive school leadership. 2* because of the correlational and self-report nature of the survey.

Analysis of the international TALIS dataset in England also highlights the importance of good leadership. **Sims (2017)** analysed data of 953 teachers in England who completed the 2013 TALIS survey. Using data for England only allows it to link TALIS data with the School Workforce Census (SWC) dataset. This provides more detailed measures of school working conditions. Logistic regression analysis shows that leadership/management is the strongest predictor of both teacher job satisfaction and teachers' desire to move school. A one standard deviation (SD) improvement in the quality of leadership is associated with 0.49 SD increase in teacher job satisfaction and a 64% reduction in the odds that a teacher would express strong desire to move school. Surprisingly, workload does not have a statistically significant relationship with either job satisfaction and intention to leave. Closer analysis shows that it is not the number of hours worked or marking workload that mattered, but whether teachers perceived their workload as manageable or not. One explanation for this is supportive leadership. School leaders that provide support and resources can make workload manageable. This notion is supported by the Job Demands-Resource theory (Demorouti et al. 2 001).

Comparing teachers' working conditions over time using the 2013 and 2018 TALIS data linked with the SWC data, **Sims and Jerrim (2020)** repeated the analysis for England, but for both primary and secondary teachers. This new study also included school discipline (not included in the 2013 dataset). Results of the logistic regression analysis shows that teachers who report higher school leadership/management are more likely to report higher job satisfaction and lower likelihood of leaving school. Of the variables related to working conditions, school leadership/management shows the strongest association with job satisfaction. For intention to leave, school leadership/management and discipline are important predictors. Again, there is no consistent pattern of association between workload and attrition. Leadership/management includes providing teachers with opportunities to make school decisions, a culture of shared responsibility, collaborative school culture with mutual support, teachers being given greater autonomy to do their work, and effective management. 2*

Stang-Rabrig et al. (2022) examined the relationship between school climate on teachers' wellbeing during the Covid-19 pandemic. In particular, they looked at support for colleagues, availability of technical support and personal resources on teachers' occupational wellbeing

(stress, exhaustion and job satisfaction). The study is a nationwide survey of involving 3250 teachers in Germany. Structural equation modelling shows that when support from colleagues was evaluated as high, teachers reported lower stress and higher job satisfaction. Support from colleagues was particularly positively related to job satisfaction and negatively to stress and exhaustion. Job satisfaction was lower if negative hindrances were present This study illustrates how a collegial school environment is important in supporting teachers' mental health. This is a cross-sectional study, so no causal interpretations can be drawn. Outcomes were based on teachers' self-reports, which can be affected by social desirability bias, and thus participants' responses both consciously and unconsciously. The use of social media to recruit participants might limit generalisability as social media channels can be selective. It is rated 2* on account of the national representative sample and the inclusion of many control covariates.

Zhang et al. (2021) examined the relationship between school climate, workplace wellbeing and stress, job satisfaction and teacher self-efficacy. Data was taken from the linked TALIS-PISA data for 9 economies for which the linked data was available. It included responses from 18,571 teachers across 1,512 schools. This is a methodological paper exploring the kernel causality analysis approach and the use of extreme responses for 4 factors: Job Satisfaction (JS), School Climate (SC), Teacher Self-Efficacy (TSE) and Workplace Wellbeing and Stress (WWS). These 4 factors are known to be strongly related to teacher turnover. The analysis shows that WWS is negatively correlated with TSE, SE and SC in some countries except for Argentina, Czech and Malta. JS is strongly correlated with WWS and TSE, SC and TSE are least related to TSE and WWS. The paper highlights some interesting correlations between school climate and teacher self-efficacy and job satisfaction in some countries, suggesting that there is a heterogeneity effects of culture and local contexts. Given the heterogeneity of results, when making educational decision, strategies should be adjusted across different countries/economies. Rated 1* because of the self-report nature of outcomes. Also, in choosing only extreme responses, it did not actually estimate the correlation between these variables.

Ladd (2011) analysed the North Carolina surveys of school climate surveys for 2006 and 2008. School leadership emerged to be the most consistent measure of working conditions, suggesting that school leaders have a strong influence on the working conditions of teachers. The relevant school leadership qualities include trusting teachers, involving them in decision making, supportive (particularly with respect to maintaining discipline), teacher empowerment (involving teachers in shared decision making). As teachers who indicated intention to leave school are more likely to rate school conditions negatively, Ladd 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. These leadership characteristics were found to be significant predictors of teacher attrition and retention rates in middle and high

schools. The multinomial analysis shows that teachers in schools with high-quality leadership are less likely to leave their current school or move to another school within the same district than similar teachers in schools with weaker leadership. Ladd also found that in schools with a high proportion of Black students the quality of school leaders has a more important influence on teachers' intended decision to leave than in other schools. While low- quality leadership in a specific school may influence teacher decisions to move within a district, a racially segregated schools appears to be more predictive of cross-district moves than within-district moves, all else held constant. Looking at actual departure, Ladd compared teachers in schools in 2005/06 with schools they were teaching in the following year (although this does not distinguish teachers who have moved to other schools or short period with those who have actually left teaching). Results are similar to those of intended departure. Teachers are more likely to leave schools with poor leadership than those with strong leadership ceteris paribus. The racial mix of school students is a stronger predictive power of teacher actual departure than the quality of school leadership at middle school compared to elementary school. Teachers' perceptions of school working conditions, which is a salient measure of school leadership, are a strong determinant of teacher's intention to leave current school. Including school working conditions in the regression increases the explanatory power by c.60% for elementary school teachers. But they are less predictive of actual departure. Working conditions account for only 15% of variation in actual departure rates. Ladd argued that although actual departure may be more reflective of the influence of school leadership and working conditions, teachers' intended departure is equally important as there could be potential costs if dissatisfied teachers translate this into less effort and lower productivity. (3*)

As with Ladd, **Grissom (2011)** also found that schools with a high proportion of Black African American children have a higher a higher rate of turnover. Using regression analysis of the 2003/04 SASS and 2004/05 TFS data, reported that principal effectiveness is associated with greater teacher satisfaction and a lower probability of teacher leaving the school within a year. For every standard deviation increase in principal effectiveness there is a 1.5-point decrease in a teacher's probability of leaving the school. The effects of principal effectiveness on teacher outcomes are even stronger in disadvantaged schools. A 1.5 standard deviation increase in principal effectiveness is enough to offset the turnover differential between disadvantaged schools and other schools, as defined by student demographics. These findings suggest that policies focused on getting the best principals into the most challenging school environments may be effective strategies for lowering perpetually high teacher turnover rates in those schools. They define effective leader as one who is discriminatory in keeping high performing teachers while increasing turnover of low-performing teachers.

Reducing turnover alone is not necessarily a positive attribute of an effective leader. Reducing

turnover for all teachers including low-performing, can have negative effects on the morale and job satisfaction of the high performing teachers. **Grissom and Bartanen (2019**) analysed longitudinal administrative data from Tennessee for the years 2011–2012 to 2016–2017 and data from the Tennessee Educator Acceleration Model (TEAM), which evaluates the effectiveness of principals and teachers. Linking these datasets, Grissom and Bartanen (2019) showed that principals rated as effective on the administrator evaluation rubric are more likely to retain teachers rated as effective based on the observation scores but less likely to retain teachers with very low observation scores.

Semarco and Cho's (2018) study found that task-oriented managerial leadership behaviours are predictive of teachers' retention intention. Task-oriented behaviour refers to planning, clarifying, monitoring, and problem-solving behaviours. This is a cross-sectional study involving 558 teachers and 279 head teachers (response rate 83%) in Ghana. Teachers' perceptions of their headteachers' managerial practices were correlated with their retention intention. ANOVA was employed to estimate the strength of the correlation. As the sample was not random (any sample with non-response is no longer random), the use of any variance of tests of significance is therefore inappropriate and wrong. Nevertheless, the authors reported that headteachers' planning activities is the only significant predictor of retention, while their clarifying, monitoring, and problem-solving behaviours significantly predicted their planning behaviour. These jointly explain just about 51% of headteachers' planning behaviour variance, suggesting that 49% of the variance was unexplained. The results are therefore unclear. The very bad reporting of the analysis did not help. Rated 1*

Player et al. (2017) used data from around 3000 teachers from the 2011-12 Schools and Staffing Survey and the 2012-13 Teacher Follow-up Survey, to explore the relationship between leadership and P-J fit and teacher mobility. The results indicate 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 fit were better predictors of teachers' retention in the profession. The sample (n= 3000) were identified using stratified probability sampling design. Principal leadership was based on 4 characteristics: supportive and encouraging, recognise good work, enforce rules and give disciplinary support, communication of school vision to teachers. For the purpose of this review, we focus on the school leadership characteristics only, i.e. not P-J fit. Multinomial logistic regression analysis for modelling multiple outcomes (staying, moving or leaving). Rated 2*.

Weiss (1999) analysed the Schools and Staffing Survey (SASS) and the Teacher Follow-up Survey (TFS) to examine the relationship between first year teachers' reports of school working conditions, teacher morale and their intention to stay. Controlling for school and teacher

characteristics, the study found that the strongest predictors of teachers' intention to stay in teaching were their perceptions of school leadership, culture and autonomy. Teacher attrition was higher in schools where teachers have little control over school decision making, administrative support is poor and student discipline problems are rife. Specifically, school leadership that encourages participation, is supportive in providing instructional and management guidance is crucial. The analysis, total sample size, and scale of missing data is unclear. It also appears that they used ordinal/categorial Likert scale data as real numbers. How the regression analysis was performed was not explained. The sample was randomly divided into two groups for the factor analysis and regressions to avoid chance factors, they did not explain what the weighted and unweighted samples were. For these reasons, the study was rated 1*

Ronfeldt and McQueen (2017) also drew on the SASS and TFS datasets, but included the Beginning Teacher Longitudinal Study (BTLS) survey data as well to investigate whether different kinds of induction supports predict turnover among first-year teachers. To mitigate against unobserved factors, the authors used propensity score matching of demographic characteristics to link 1600 teachers receiving extensive induction (i.e., 4 to 6 induction supports) with 1130 teachers not receiving extensive induction (i.e., 0 to 3 types of support). Unlike previous studies that focused on only one cohort, this study looked at three recent cohorts of teachers. In total, there were 13,000 across the three waves, but only 2340 were first year teachers that could be linked to both teacher and school characteristics. The authors correlated the level of induction support with teacher outcomes (leaving school and leaving profession). Multilevel regression analyses showed a negative correlation between the number of combined induction supports and teachers' likelihood of leaving school or teaching in their second year and across five years. Receiving extensive induction supports reduced migration by 5% compared with not receiving extensive induction supports. Of all the induction supports, supportive communication with school leadership had the biggest impact, reducing the odds by 55% to 67%. Every additional induction support was associated with an average decrease in the odds of leaving teaching by between 18% and 22%. One major limitation of this study is that the measure of induction is based on teacher self-report and this can be prone to reporting biases. 2*

A weaker 1* study provides support for the training of school principals in developing a positive school culture **(Peer 2012).** This study examined the Arkansas Leadership Academy's Master Principal Program, which provides training to exemplary principals to master principals. There are three phases to the programme. Participants typically meet at a conference retreat centre four times during the year for a total of thirteen days. The learning activities are collaborative, constructive and relevant to the work of the principals. They learn to work in new ways, and are expected to be reflective and apply the knowledge and skills learnt at their school through multiple, differentiated work assignments between sessions. With each phase, principals go

deeper into the performance areas. Principals are accepted into the next phase upon submission of a portfolio meeting the minimum score criteria. The study included 15 principals with over 21 years of experience. In general, the common theme among the principals was the culture change within their school, greater collaborative involvement and commitment to improvement.

This study was rated 1* as the impact was assessed based on the participants' perceptions of change, which is a reflection of their own experience rather than what actually happened in the school – it is all very anecdotal. It is well known that people who participated in a project are more likely to report positive results even though there is no evidence that it does (e.g. Khan & Gorard 2012). Moreover, these are exemplary principals who were specially selected for the programme. There is no evidence that the same programme worked with all principals in general. There is also no comparison with what the other exemplary principals who did not get selected perform. Triangulations of different data sources – all based on subjective measures, cannot address the issue of validity and trustworthiness. This is a very common assumption made by researchers. Although it is rated 1* it is included here as there is a clear logic model that builds on high quality prior research and evaluation.

Herman et al, (2021) conducted two RCTs of a school leadership training programme to improve school leadership skills and organisational climate. The 2021 paper reported on the results of the impact of Covid-19 on teacher stress using a correlational design. The Leadership in Behaviour Support (LBS) supports administrators in shaping and influencing school culture and climate. The goal is to create and sustain a positive school environment that fosters growth, encourages responsible behaviour, and fosters student success. 639 teachers in 31 schools from across phases in education took the Covid-19 survey. Teacher wellbeing was measured using single items for teacher stress, coping, job satisfaction and overall health as well as 2 items from the Patient Health Questionnaire and 7-item General Anxiety Disorder instrument. These measures were collected before the pandemic, at the onset of the pandemic and during the pandemic to compare changes over the period. Organisational health was assessed using the Organisational Health Inventory, which measured Collegial Leadership (perception of principals as friendly and supportive). As the teacher surveys were anonymous, comparisons were conducted at school level (less powerful) based on simple regression models. Prior school year were included as covariates. Participation in the intervention was also added as covariates. The results showed that teachers' wellbeing (stress, depression and anxiety) was negatively correlated with the school climate, and a collegial school leadership positively predicted teachers' wellbeing and job satisfaction. This was rated 1* because the results did not estimate the impact of the intervention. Instead, it used participation in the intervention and prior school year as covariates. Effectively, the study could only establish correlation rather than causation – a missed opportunity.

In another correlational study**, Pagán-Castaño et al. (2021)** examined the relationship between school leadership, human resource management (HRM), teacher wellbeing and work performance. The theory is that HRM practices and leadership have an impact on teacher wellbeing, which in turn affects job satisfaction. The sample included 315 secondary school teachers from 75 schools in Spain. HRM measures included practices like consistency, coherence, consensus (agreement and fairness). Wellbeing included measures of emotional burnout, psychosomatic disorders and physical health symptoms, job satisfaction and happiness. Leadership quality was measured using the **Empowering Leadership Questionnaire** (ELQ), which assesses 2 leadership styles: leadership by example and leadership of high communication. Data was analysed using structural equation modelling to estimate the relationship between the dependent and independent variables. The number of items for each construct was reduced using PCA or averaged to form composite measures. Analyses was unnecessarily complicated and difficult to follow. The results show that high communication leadership and leadership by example are positively associated with human resources management (R^2= 0.74), explaining 74% of the variance. HRM, in turn, is positively associated with psychological wellbeing (R^2 = 0.64), explaining 64% of the variance, and physical wellbeing (R^2 = 0.05). These results suggest that leaders who are empowering, have open communication and who set an example can have positive effect on teachers' psychological wellbeing and performance. This study is rated 1* because it is correlational and not based on a national representative sample. It is not clear how the school leaders were identified or selected.

A number of studies have suggested leadership empowerment is associated with positive of satisfaction and work commitment. Empowering leadership is one where school leaders empower their staff and give them the autonomy in decision making and control over some aspects of the school organisation. Four studies looked specifically at whether empowering leadership has beneficial effects on teachers' job satisfaction and mental health. These are all cross-sectional studies with no comparators, so the evidence is weak.

Liu, Yang & Huang (2021) surveyed 557 Chinese kindergarten teachers in China (98% completion rate) using a 5-point Likert-scale questionnaire to measure school leadership and job satisfaction. The results show a positive relationship between empowering leadership and teacher's job satisfaction, with job satisfaction being positively associated with affective commitment.

Klecker & Loadman (1996) reported positive relationship between teachers' perception of the level of leadership empowerment and their self-report levels of job satisfaction. The study surveyed 10,544 classroom teachers from 307 schools in the US. Only 4,084 responded (39% response rate), so the results could be biased. This is rated 1* as the correlational design could

not account for unobserved potential confounders. Leadership empowerment was measured using a 5-point Likert scale instrument that measures teachers' perceptions of professional growth, decision making, control over aspects of their work. Job satisfaction was also collected via a survey.

Suleman et al. (2021) also reported a positive correlation between leadership empowering behaviour (LEB) and teachers' psychological wellbeing. The higher the leadership empowering behaviour the higher was the teachers' psychological well-being and vice versa. 564 secondary school teachers in London were surveyed with a response rate of 92%. Despite the stratified random sampling, oddly only 32% of the sample was female, the majority were males. Wellbeing was measured using the 6-point Likert scale Psychological Well-being Scale, while the leadership behaviour was measured using the 7-point Leader Empowering Behaviour Questionnaire (LEB). Regression analysis shows that 66% of the variance in teachers' psychological wellbeing was explained by all the subdimensions of the LEB. The strongest predictor was accountability for outcomes, followed by coaching for performance, delegation of authority and information sharing. This suggests that such leadership characteristics can influence teachers' wellbeing. However, as this is a correlational design, the direction of causation could be reciprocal, where teachers with high psychological wellbeing may be more likely to report better leadership support. The regression did not control for pre-psychological wellbeing state, so it is hard to be confident about the results.

However, the stronger 2* study suggests that empowerment works only under an effective leader. This is not to say that an empowering leadership is not effective, but rather that the evidence we have is weak. Absence of evidence is not the same as evidence of absence. More rigorous research that can falsify the null hypothesis is needed.

Grissom (2012), the only 2* study in this category, suggests that empowering teachers and involving them in decision making alone is not enough. Merely establishing organizational policies and priorities through employee participation is less likely to have an impact on workers than actually implementing those policies since it is through implementation that employees' work environments are affected and that organizations send the signal that employee input is useful and valued. The impact of empowerment intervention on teachers' job satisfaction depends on teachers' perceptions of the amount of support they received from their managers. Grissom analysed data from the 2003-2004 Schools and Staffing Survey (SASS) and the 2004-2005 Teacher Follow-up Survey on working conditions such as school climate and staff relations. The sample included 31,000 teachers in 6,300 schools. Of relevance are measures of principal effectiveness and the degree teachers participated in school policy decisions, and their relationship with teacher turnover. Since teachers who are dissatisfied and planning to leave may

rate principals as less effective or feel less influential in school decision making, correlations were conducted using school-level means among all teachers in the school rather than individual teacher-level means. Multivariate analyses also standardised these school level means across schools, which makes it sensible to use effect sizes of standardised means. Analysis also controlled for school (e.g. pupil intake, % of ethnic minority pupils, and class size) and teacher characteristics.

They found that teachers' participation in organisational decision making had no influence on their likelihood to stay in teaching. Only under an effective leadership, that teachers' participation in decision making have a positive influence on teachers' retention. It is possible that ineffective principals may establish participative organisation structures, but do not necessarily use them authentically for shared decisions. However, the data does not allow for identification of the precise mechanisms driving the interactive association between supervisor effectiveness, employee participation, and employee retention. Principals' effectiveness and teachers' perceptions of participation were based on subjective self-report measures. Other factors may be omitted that could bias the results.

One limitation in research in this area is leadership attributes are often measured using teacher self-report, which may have the problem of common-source bias. The stronger studies (2*) have tried to address this issue by comparing the responses of all teachers in the same school with those of the target teacher. Similarly, measures of working conditions and organisational climate are survey-based asking teachers about their perceptions of working conditions.

Those studies using large administrative data tended to be observational looking at the data across one year. The observational nature of the studies based on teachers' self reports of intention to stay/leave means that we cannot draw causal conclusion that improving principal leadership or other organisational climate will improve teacher job satisfaction or reduce turnover. What is needed is more rigorous analysis over an extended period observing whether teachers' decisions change under different principals within the same school. This can give a better picture.

If these studies show that working conditions are predictors of teacher mobility, turnover and attrition, then it would be useful to design policy interventions to specifically improve working conditions within schools and compare their efficacy with the use of monetary incentives, which are often used to compensate for poor working conditions. On the other hand, if they do not, then policy makers need to be careful about attributing teacher attrition/turnover to poor working conditions.

What attributes or practices of school leaders support teacher job satisfaction, wellbeing and retention?

The complexity of school leadership attributes and working conditions makes it difficult to pinpoint precise characteristics or practices that are most influential. Effective school leaders supporting teachers' well-being, job satisfaction, and retention typically exhibit a combination of various characteristics, making it difficult to identify a single attribute or practice as the key factor.

Correlational analyses from large administrative datasets spanning multiple years indicate that a supportive leadership can have positive influence on teachers' job satisfaction, well-being, and retention intentions. Such leaders provide resources, maintain discipline, and shield teachers from external pressures. Other leadership practices, like fostering collegial collaboration, offering professional development opportunities, and involving teachers in decision-making, contribute to lower turnover rates. Effective leaders are perceived as fair, consultative, and inclusive.

Contrary to previous studies, our review found no clear evidence that empowerment leadership alone is effective in bolstering teachers' well-being and retention. The stronger study suggests that empowerment works only when under the guidance of an effective leader who ensures the implementation of organizational policies and priorities.

INTERVENTIONS TO IMPROVE CLASSROOM MANAGEMENT STRATEGIES AND SCHOOL CLIMATE

Improving the overall school culture and working environment is a crucial consideration in enhancing teachers' job satisfaction and mental well-being. This section explores interventions and professional development programs designed to improve the organizational climate and classroom management strategies within schools.

While school leaders play a pivotal role in influencing the school's working environment, the question arises: Can enhancing the entire school culture and working environment improve teachers' job satisfaction and mental well-being?

One specific area of intervention involves training teachers in classroom management, with the goal of supporting their well-being, specifically in terms of professional self-efficacy and stress. Nine studies in this review are concerned with such interventions (Table 7). Classroom management is identified as one of the most challenging aspects of teaching, particularly in high-poverty schools where teachers often receive minimal training in this area (Reinke et al., 2013,

p. 39). Disruptive pupil behavior is a significant source of stress for teachers (Hastings & Bham, 2003; Griffith, Steptoe, and Cropley, 1999).

The "Incredible Years Teacher Classroom Management" program stands out as one of the few interventions that have undergone robust testing. This review evaluates five studies examining this program and similar classroom management interventions with a focus on teacher outcomes. These interventions aim to equip teachers with effective strategies to manage classrooms, potentially alleviating stress and contributing to overall improvements in job satisfaction and mental well-being.

Table 7: Interventions to improve school climate and classroom management strategies (n =9 studies)

Strength of evidence	Positive	Mixed/inconclusive	No/negative
4*			
3*			· Hayes et al. 2020 (no impact on wellbeing and self-efficacy)
2*			· Gaspar et al. 2022
1*	· Kunz Heim et al, 2019 · Ross et al. 2012	· Richter et al. 2012 (improves principal's behavioural management, but not management effectiveness)	· Ouellette et al. 2018 (no effect on teacher stress and job satisfaction)
0	· Kennedy et al, 2021 · Reinke et al. 2013	· Marlow et al. 2015 (no effect on self-efficacy and burnout, improvement in classroom management self-efficacy)	

Interventions to support teachers in classroom management

The findings from the reviewed studies on training teachers in classroom management present a mixed picture regarding its effectiveness in supporting teachers' stress and self-efficacy. The stronger studies with higher ratings (2* and above) found no evidence of change in self-reported well-being, burnout, or psychological distress (Hayes et al.2020; Gaspar et al. 2022). On the other hand, lower-rated studies such as Kennedy et al. (2021) and Reinke et al. (2013) reported positive outcomes, while Marlow et al. (2015) showed mixed results on teacher well-being.

These findings may suggest that the impact of training in classroom management on individual teachers' stress and self-efficacy may not occur without concurrent organizational changes, leadership support, and changes in the wider context of their professional lives. For example, changes in the school environment, the introduction of a new headteacher, or shifts in student populations can also influence teachers' work, job satisfaction, and retention. Consequently, attributing improvements solely to the intervention becomes challenging.

In summary, the evidence from this review suggests that training teachers in classroom management may not consistently yield positive effects on teachers' stress and self-efficacy. The complex interplay of various factors, both within and outside the classroom, underscores the need for a comprehensive and nuanced approach to addressing teacher well-being and job satisfaction.

Hayes et al. (2020), rated 3*, evaluated the Incredible Years-Teacher Classroom Management (IY-TCM) programme in the south west of England. One teacher from each of the 80 primary schools (reception to Year 4) was selected by their headteachers to participate. Randomisation was at school level where 40 were randomly assigned to IY-TCM and 40 to control. Final analysis included only 74 teachers (attrition rate of 7.5%). TCM was delivered to groups of up to 12 teachers in six whole-day workshops over 6 months. The training included collaborative learning, reflections about teachers' own experiences, and group work to find solutions to problems encountered in the classroom. Between each workshop teachers had opportunities to practise the strategies taught. The workshops covered key concepts based on cognitive social learning theories. Teachers were also taught the importance of modelling and self-efficacy and handling challenging behaviour. Teachers' mental health was assessed using three instruments to measure self-efficacy, everyday feelings and burnout. All instruments were on Likert scale. The results of the regression analysis, controlling for school, pupil and teacher background characteristics showed no intervention effect on teacher wellbeing. In fact, there was a small negative effect on teacher wellbeing self-efficacy, burnout and professional efficacy.

Another evaluation of the IY-TCM programme **(Gaspar et al. 2012)** examined the impact of the

programme on pre-school teachers' classroom management, self-efficacy and stress. This was a wait-list cluster RCT. Participants included 65 Portuguese pre-school teachers who agreed to participate after an invitation (45.5% of all invited) and 1,030 children. Classrooms were matched based on economic need and classroom size and one of each pair was randomised to intervention (n = 26 classes; 33 teachers) or to wait-list control (n = 26 classes; 32 teachers). The intervention was a 6 monthly workshops of 6 hours each, delivered by accredited trainers over 6 months. The programme included regular peer supervision and supervision with a certified leader and mentor. In addition, teachers also received manual and workshop protocols and handouts. Individual coaching was offered to support teachers in the classroom. Between the workshops individual coaching was also available via email. Teachers also earned credits through participation, which contributed to their career progression. Teacher classroom management strategies (IY-TCM classroom strategies questionnaire), teacher self-efficacy and teacher stress were assessed using Likert scale self-report questionnaires. Although intervention teachers were using more positive and less inappropriate classroom strategies, these behavioural changes did not result in changes in teacher competency in managing disruptive behaviour, self-efficacy and job-related stress. No intervention impact was found in relation to collaboration with other teachers in terms of asking for, and giving, support and sharing strategies to manage stress. This study was rated 2* because of the small self-selected sample.

The weaker studies, rated 1* or 0*, showed mixed and positive effects. **Kennedy et al. (2021)** explored the impact of IY TCM reported improvements in wellbeing, emotional exhaustion, personal accomplishment and self-efficacy results after participation in the programme. The evidence from this study is weak as it is a single group pre-post design. Without a comparison group, it is not possible to tell if any changes are due to the intervention or something else. Hence, it is rated 0*.

Reinke et al. (2013) also evaluated another classroom behaviour management strategy (IY-TCM). Participants were 33 teachers from 3 primary schools, which implemented the School-Wide Positive Behavioural Interventions and Supports (SW-PBIS) with high fidelity. The aim of the study was to examine teachers' use of specific classroom-level practices that align with SW-PBIS and the association between these practices and teacher-reported self-efficacy in classroom management and emotional exhaustion. There was no comparison group as such and observations were conducted prior to the implementation. Use of classroom management strategies was estimated from direct observations. Findings indicate that teachers who use higher rates of general praise report being more efficacious with regard to classroom management. On the other hand, teachers who reported feeling less efficacious had higher rates of disruptive behaviour. In addition, teachers with lower rates of positive or negative interaction, and who used higher rates of harsh reprimands had higher rates of disruptions and reported

higher levels of emotional exhaustion. It is not possible to draw any causal relations in this study, hence 0*. A later study (Reinke et al. 2018) reported the results of the randomised control trial, but only for student behavioural, emotional and academic outcomes.

Marlow et al. (2015) carried out a feasibility study of the IY-TCM intervention as a public health intervention. This was a one-group pre-post study. Participants included 37 teachers who attended the training (attrition 7%), who either volunteered or nominated by the principal. The training was in groups, and it was collaborative, self-reflective and experiential learning process, whereby teachers share ideas, problem solve issues and practice strategies together (Webster-Stratton, 2014). Teachers were trained in effective use of attention, social and emotion coaching, praise and encouragement, for addressing difficult behaviour problems, use of proactive classroom management strategies for managing misbehaviour, promoting positive relationships with difficult students, strengthening social skills, emotional regulation and problem solving in the classroom and strengthening teachers' collaboration and positive communications with parents. Focus groups and semi-structured interviews with headteachers collected teachers' responses about feasibility of the approach. Data on teachers' professional self-efficacy, burnout and wellbeing (psychological distress) were collected before and after the intervention. Teachers' reported improvements in self-efficacy in classroom management, no evidence of improvement in professional efficacy, and no effect on burnout. 0*

Another classroom management intervention is a training course on self cognition to develop skills in dealing with difficult student behaviours and classroom disruptions (**Kunz Heim et al. 2019)**. It includes 4 half-day modules (3.5 hours). It was carried out in 5 German-speaking Swiss cities. This study was structured as a longitudinal quasi-experimental study with one pre-test and three post-tests. 140 primary teachers volunteered to participate, but only 129 were included - 71 of them were in the intervention group and 58 were in the control group. All teachers who signed up 2 months before the start of training were assigned to intervention, and teachers who signed up later formed the control group. Dropout rate was low (8.5%). Interviews with 118 indicated that those in the intervention group showed a tiny decrease in the perceived disruptions in teaching at post-test. While the decrease in disruptions continue at six months and one year after the intervention, the effect diminishes over time. There was a slight increase in reported self-efficacy from pre- to post-test for the intervention group, while that of the control remained stable over time. Teachers also reported improvement in competency self-concept, but effects decreased over time. Intervention group showed a reduction in perceived stress from disruptive student behaviours between pre-test and the last post-test. This was rated 1* as groups may be inherently different since intervention teachers were those who registered interest earlier. Also, outcomes were based on teacher self-report from interviews.

School wide improving programme.

Three studies in this review evaluated the impact of school wide programmes that aimed to support teachers in managing student behaviour. **Ouellette et al. (2018)** investigated the effects of training in and use of four classroom evidence-based interventions on teacher job satisfaction and stress. The study is a longitudinal design where six high poverty urban elementary schools were randomly assigned to a school mental health services model (L2L) for referred disruptive students or to usual professional development (services as usual; SAU). Participants included 136 teachers. Teachers in the L2L schools (intervention group) received training and ongoing consultation to implement two class-wide interventions (*Good Behaviour Game and Peer-Assisted Learning*) and two targeted interventions for referred students (Daily Report Card and Good News Notes). Specifically, L2L teachers attended weekly 1-hour meetings before and after school hours for 3 months. Training includes a classroom demonstration of the four interventions. Teachers with behaviourally referred students also received in-class support. The results showed that the mental health training L2L had no effect on teacher stress and job satisfaction. The strongest predictor of teacher stress and job satisfaction was organisational health. Controlling for teacher demographics, organisational health had a moderate-to-strong positive association with teacher satisfaction. This study suggests that it is more effective to focus interventions on improving organisational climate. Over reliance on self-report measures, inclusion of only one year data and the use of OLS rather than hierarchical regression modelling, as well as high level of missing data and small number of cases (n =6) reduces the trustworthiness and generalisability of the results (2*). The Quality of Teachers Work Life survey focused strongly on organisational predictors of success, which may have explained the strong associations between the QWTLS and organisational health scores.

Others suggest that focussing on organisational climate may be more beneficial than simply training teachers in behavioural management. One such intervention that addresses school organisational health or teachers' working environment is the School-wide Positive Behaviour Interventions & Supports (SWBIS) programme. Most studies on SWPBIS evaluated student outcomes. **Ross, Romer & Horner (2012)** examined the relationship between participation in SWPBIS and teacher perceptions of burnout and self-efficacy in 40 schools in Oregon, US (20 high-scoring and 20 low-scoring). SWPBIS is a three- tiered intervention, increasing in intensity based on the severity of the problem behaviour. Participants included 200 randomly selected teachers (91% response rate). Multilevel regression analyses show that teachers in schools with higher levels of SWPBIS implementation reported lower levels of depersonalisation, and the effect was stronger in schools with lower socioeconomic status. Similarly, SWPBIS was more effective on Self-Efficacy in schools with lower-moderate SES, but not effective in high SES schools. Compared to national norms, teachers in schools with high level of implementation scored higher on all measures, while teachers in schools with low implementation scored similar to the national

average. As SWPBIS is tiered, it is not clear if high implementation refers to schools where problem behaviour was most troublesome. This was not discussed. The study was rated 1* because of the small sample size, drop-out at each stage in the selection process, no pre-post comparisons, although comparison was made with national norms.

Another study **(Richter et al. 2012)** also evaluated the SWPBS. It compared schools that implement the School-Wide Positive Behaviour Support (SWPBS) with schools that do not. 15 SWPBS primary schools were matched with another 15 non SWPBS schools with similar demographics and geographic regions (n = 725 teachers). Response rate from non-SWPBS schools was poor, as low as 27%. Outcomes were measured using self-report 5-point Likert scales instruments. SWPBS appears to be effective in improving principals' behavioural management, but not their managerial effectiveness. But principal behaviour management was a strong predictor of teacher job satisfaction. However, it is not clear how this conclusion was arrived as no regression analysis was performed.

Does intervening to support teachers' classroom management skills or intervening to provide a positive school environment improve teachers' wellbeing and job satisfaction?

In summary, there is no evidence that interventions to support teachers' classroom management of disruptive behaviour or any of the school-wide positive behaviour interventions lead to better teacher wellbeing. Five studies evaluated the Incredible Years Teacher Classroom Management programme. Results from the stronger studies found no effects of IY-TCM training on teachers' wellbeing and mental health (Gaspar et al. 2012; Hayes et al. 2020). The lower rated studies reported positive (Kennedy et al. 2021; Reinke et al. 2012) or mixed results (Marlow et al. 2015) on teacher wellbeing. The evidence for SWPBIS in supporting teacher stress and job satisfaction is weak. The role of school leaders in providing a positive school organisational climate remains a strong predictor of teacher job satisfaction and wellbeing.

Mentoring and professional development programmes to support teacher self-efficacy and job satisfaction

Other studies looked specifically at how mentoring and induction or professional development can support teacher wellbeing and teacher retention. Supporting and retaining beginning teachers has been linked to early career teachers' stress and early departure from teaching. Although government policies in England have highlighted teacher mentoring and induction programmes as part of the Early Career Teachers' Framework, beginning teachers' stress persists and attrition among teachers in the first five years remains high. Teacher mentoring has been identified as an important way to support beginning teachers. The strongest studies suggest mixed effects – positive on some measures but not others. Eight studies in this review are focused on mentoring and professional development (Table 8)

Table 8: Intervention - Teacher professional development/mentoring and classroom management (n = 12 outcomes)

Strength of evidence	Positive	Mixed/inconclusive	No/negative
4*			
3*		· Glazerman & Seifullah (2012)	
2*	· Mosley & McCarthy 2023	· Gaikhorst et al. 2017 (Positive on self-efficacy)	· Hahs-Vaughn & Scherff 2008
1*	· Fernandes et al. 2019 · Richter et al. 2013	· Gaikhorst et al. 2017 (No effect on retention) · Kutsyuruba et al. 2019 · Harding et al. 2019 (positive on job satisfaction, but not depression)	Talvio et al. 2013
0	· Katz 2014		· Lowrey 2012

Glazerman & Seifullah (2012) evaluated the Chicago Teacher Advancement Programme (TAP), a school-wide teacher professional development and teacher incentive programme. TAP teachers meet with their mentors every week for at least 45 minutes and have the lessons observed by the school leadership team to help them meet performance goals. TAP was designed to retain best teachers by rewarding performance, providing CPD and leadership opportunities. This was a 4-year study where 8 schools were randomly assigned to experimental (Cohort 1) and 8 to control (Cohort 2), another 9 schools in Cohort 3 assigned to receive intervention the following year and 9 to control (Cohort 4). TAP schools were matched with non-TAP schools (using propensity score matching) and retention data was collected from district administrative records. The results were not consistent across cohorts. Overall, although TAP had some impact on inducing teachers to stay longer in their schools, the impacts were not uniform across years, cohorts, and subgroups of teachers. There was no evidence of impact on district retention. Much of the attrition from school was movement between schools. Retention rates also dropped over time and were lower for later cohorts, albeit staying on rates were higher compared to non-TAP schools.

In a quasi-experimental study, **Gaikhorst et al. (2017)** evaluated the impact of a professional development programme on beginning teachers' self-efficacy, job motivation and intention to stay. Participants were 133 teachers (n = 67 control; 66 experiment) from an urban primary school who volunteered for the programme. The experimental teachers participated in the Mastery Programme with special focus on teaching activities in an urban environment, while the control teachers took part in an alternative PD focused on maths and ICT. The programme lasted one year. It is not clear how the groups were determined, but the authors mentioned matching characteristics. The analysis shows positive effects on all measures except for retention. However, it has to be mentioned that only 44/67 of control teachers

and 28/66 of experimental teachers completed the retention measurement. Attrition was 46%. The long-term impact is unclear as only 50% of the original sample were retained. Only 28 of the experimental group completed retention measurement. Assuming the rest could have left teaching, the effect could be negative. The study was rated 2*, but 1* for retention on account of the high attrition.

Mosley & McCarthy (2023) examined the relationship between mentoring and first year teachers' stress using data from 1,980 teachers from the Beginning Teacher Longitudinal Survey (BTLS) for 2007/08, part of the Schools and Staffing Survey (SASS 2007- 2008) which measures teachers' perceptions about their working conditions, and the Teacher Follow-up Survey, which asked teachers about mentoring frequency and helpfulness in their first year. The sample included 1,980 full time teachers. Teacher stress was measured using the Classroom Appraisal of Resources and Demands (CARD) scoring system. Stress was defined as inability to meet workplace demands indicated by the level of demands vs resources available. Teachers who identified classroom demands as exceeding resources reported significantly fewer and less helpful mentoring experiences than teachers rating demands and resources as equal. Teachers with higher resources than demands reported significantly greater and more helpful mentoring experiences. High resourced teachers were also more likely to stay in their school in the first year (84%) compared to high demanded teachers (66%). Having mentors in the same subject also has a positive effect on teacher stress. Having a mentor in the same grade, but not the same subject is less effective. Teachers who experienced greater stress were more likely to say that mentor did not improve their instruction. This was rated 2* because of the large population sample, but because it was a correlational design, the direction of causation could not be determined. It is possible that those who experience more stress were more likely to report less helpful mentoring experience and vice versa.

In another study, **Hahs-Vaughn and Scherff (2008)** analysed the 1999–2000 Schools and Staffing Survey (SASS) and the Teacher Follow-Up Survey, but for beginning English language teachers specifically. As teachers who participated in one mentoring activity is also likely to be involved in others, they analysed the combined effects of mentoring activities. They found that after controlling for school and individual characteristics, only salary was significantly associated with beginning English teachers' leaving the profession (see Ingersoll 2001). No factors were related to decreased attrition. Perhaps it is the teachers' person-vocation fit (see Player et al. 2017) that explains why some teachers stay in the profession and some do not. They also found that mentoring and induction activities did not explain either attrition nor migration, after controlling for school and individual characteristics. Rated 2*

Harding et al. (2019) examined a professional development (PD) programme involving coaching and teacher relationship. This is a correlational study (rated 1*) to examine how different types and characteristics of an Early Care and Childhood professional development programme predict teachers' job satisfaction, depression, wellbeing and practices. Data was taken from three cohorts of Head Start teachers (n = 484), with an attrition of 18%. Measures of teacher outcomes were collected through teacher surveys and the PD supports. The study found mixed results, indicating positive correlation between PD and job satisfaction, and positive correlation between types of support (e.g. visiting other classrooms or centres) and job satisfaction. In general, there was no relationship between PD support and teacher depression.

The other five studies were weaker, all rated 1* or 0*. Two reported positive effects of mentoring and professional learning (Fernandes et al,. 2019; Richter et al. 2013). Two suggested that it is not mentoring alone, but the types of mentoring that mattered (Kutsyuruba et al. 2019; Lowrey 2012), while one (Talvio et al. 2013) found no effects on teacher wellbeing.

Katz (2014) evaluated the Three Block Model of Universal Design for Learning UDL), a classroom management programme to support inclusive education. Participants were 500 teachers who attended a one-day workshop on the Three Block Model of UDL. Teachers who expressed interest in using the model in their classroom formed the treatment group and received another three half days of PD on implementing the model, while those who did not express interest formed the control group. The results show no difference in intervention effect on teacher instructional practices. While the author reported reduction in teachers' workload and improvements in self-efficacy and job satisfaction, these were based on teachers' reports in interviews. There was no data to support these claims, despite data being taken at pre and during intervention, hence the 1*

Kutsyuruba et al. (2019) found that teachers who had formal mentoring had better external wellbeing than teachers who had no mentoring at all (ES = 049). But there is little difference between informal mentoring and formal mentoring. Having both formal and informal mentoring shows marginal advantage compared to having either formal or informal mentoring alone. **Lowrey (2012),** however, found no relationships between different types of induction and teacher self-efficacy. One explanation could be that beginning teachers in the school already had a high level of self-efficacy. This was a natural experiment comparing different types of induction programmes of different intensity already practiced in schools. The study was rated 0* because only 22 teachers (response rate of 10%) completed the survey. According to **Richter et al. (2013),** what mattered is the quality of mentoring and not the frequency that is beneficial in supporting beginning teachers' professional competence and wellbeing. **Fernandes et al. (2019)** also reported positive effects of a professional learning programme on a range of teacher outcomes, including motivation, resilience, behaviour management, work wellbeing and positive experiences. This was a quasi-experimental study involving 17 experimental teachers (who volunteered for the programme) and 24 control. Experimental teachers attended 18 hours of training consisting of 6 modules on stress management, emotional wellbeing, resilience, classroom management and building relationships. The outcomes are closely related to the intervention. This together with the small sample and the fact that teachers volunteered reduced the rating to 1*. **Talvio et al. (2013)** examined the effect of a teacher effectiveness training programme (Gordon Training International) on teacher wellbeing. No effect was detected on all wellbeing measures except for self-fulfilment (opportunities to work according to one's own).

Does mentoring and professional development support teachers' wellbeing and job satisfaction?

In summary, the existing evidence suggests that professional development initiatives, including mentoring and induction programs for beginning teachers, do not consistently demonstrate beneficial effects on teachers' stress and well-being. The stronger studies (rated 2* and above) indicate mixed effects, with

some reporting positive outcomes on teachers' job satisfaction but not well-being. Other studies found that professional development positively influenced teachers' self-efficacy but had no discernible effect on their decision or intention to stay in teaching (Gaikhorst et al., 2017). The long-term impact remains unclear due to high rates of attrition.

One notably high-rated study (3*) found a positive effect of a teacher professional development programme on teachers' retention within a school but not within a district (Glazerman & Seifullah, 2012). However, these effects were inconsistent across cohorts. Moreover, studies suggest that the effectiveness of mentoring may depend on the mentors themselves. Specifically, having mentors in the same subject area was found to be effective in supporting teachers in coping with stress and workload, while having mentors in the same grade had no discernible effect (Mosley & McCarthy, 2023).

In essence, while some positive effects have been observed in certain areas, the overall impact of professional development on teachers' stress and well-being appears to be variable and context-dependent. Further research and nuanced approaches are needed to better understand the factors contributing to the effectiveness of these programs in supporting teachers' mental health and job satisfaction.

DISCUSSION

Efforts to address teacher shortages have traditionally concentrated on strategies aimed at attracting more individuals into the teaching profession through a range of policy initiatives. In recent times, there has been a notable global shift, particularly among policymakers in developed regions like Europe and English-speaking nations such as the US, Australia, New Zealand, and Canada, toward a heightened emphasis on teacher retention. Factors like pay, job status, working conditions, and workload have been identified as significant contributors to teacher attrition, exerting a profound influence on teacher well-being and job satisfaction. Substantial research underscores the pivotal role played by teachers' work environment and leadership support in shaping their overall well-being and satisfaction. Consequently, the enhancement of teacher retention calls for a strategic focus on addressing key elements such as working conditions, professional status, and job satisfaction.

This review comprehensively synthesizes international evidence on effective approaches to improving teacher job satisfaction and well-being, and thus teacher status.

What works in improving teachers' image/status?

In this review no specific studies were identified that directly addressed teacher status or image. Instead, the majority of studies referenced job satisfaction, teacher well-being, and professional development as proxies for improving teacher status. An illustrative example is the OECD report on valuing teachers and raising their status, which emphasized the significance of teacher confidence, self-efficacy, and well-being as key factors in enhancing teacher status (Schleicher, 2018b). Consequently, this review provides a summary of findings from studies that focused on efforts to enhance teacher job satisfaction and well-being, acknowledging the inherent connection between these factors and the broader issue of teacher

status in the educational landscape.

To improve job satisfaction and well-being among teachers, the review identified a number of approaches, falling into four main intervention categories, but there is no strong evidence that any of these approaches work due to design and methodological weaknesses:

Direct Individual Interventions:

- These interventions address individual teachers' well-being by providing support for stress management and fostering positive psychology. This may include mindfulness training, emotion regulation, and other stress-reducing techniques.

  The evidence for these interventions is weak and show mixed results. Almost all the studies include a range of well-being components like burnout, stress, anxiety, emotional exhaustion, and mindfulness. Studies employing the Maslach Burnout Inventory scale, considered the “gold standard” for measuring burnout, indicate varied impacts—some positive effects on certain dimensions but not on others, with no significant long-term benefits observed. Notably, self-efficacy remains unaffected across these studies. Studies reporting positive outcomes typically rely on teachers' self-reports, where teachers concentrate on emotions elicited during interventions, indicating a potential bias.

  Some 3-star studies suggest potential stress and anxiety reduction through mindfulness training, measured by salivary cortisol. Improvements in working memory and attention were also observed. However, no changes in heart rate, blood pressure, or absenteeism were noted post-intervention.

  Studies administered by researchers, who are also the authors, tend to report positive results (Kreplin, Farias & Brazil 2018; Goyal et al. 2014), a phenomenon known as experimenter bias (Rosenthal 1964). When compared to active controls like relaxation or psychoeducation, mindfulness interventions did not consistently yield better outcomes and may even have adverse effects on some individuals (Kreplin, Farias & Brazil 2018). These findings suggest a need for further exploration and consideration of potential biases in interpreting the efficacy of mindfulness training in reducing stress and enhancing teacher well-being.

  Other direct interventions involve altering behavioural states through psychological interventions. However, the evidence supporting these interventions is similarly weak due to methodological limitations, such as assessing multiple components of well-being with inconsistent or mixed results. While positive effects were noted in certain outcomes, others did not exhibit improvement, with these measures predominantly reliant on self-reported data. Additionally, design flaws were apparent, including studies lacking randomization (e.g., Rahm & Heise 2019), small sample sizes (e.g., Cook et al. 2017; See et al. 2023), high participant attrition (e.g., Sottimano et al. 2018), or non-response.

Furthermore, the effects observed in some measures were not sustained over time (e.g., Dreer 2020).

Managerial Factors:

- Leadership Practices: This approach focuses on attributes and practices of school leaders, such as providing professional development opportunities, managing workload, and addressing disciplinary issues. Supportive, collaborative, and communicative leadership practices contribute to a positive school climate.

  The organisational climate or working environment within schools is a facet heavily influenced by school leadership practices. Teacher wellbeing, job satisfaction, and propensity to stay in teaching are often linked to the school environment. School leaders play a pivotal role in supporting teachers by offering professional development opportunities, managing workload, and addressing pupil disciplinary issues.

  Unfortunately, the research in this area is not robust. The majority of studies are correlational, indicating potential connections rather than causation. It's challenging to ascertain whether job satisfaction and well-being result from leadership practices or if contented teachers, already committed to teaching, simply rate leadership highly. More robust research is needed to address this ambiguity regarding the direction of causation.

  Moreover, these studies heavily rely on self-reported data, which, while valuable for understanding subjective experiences, are susceptible to biases. Respondents might offer socially desirable responses or use the questionnaires to air grievances, leading to common source bias. Additionally, the fluctuating nature of responses over time, despite consistent working conditions, adds complexity, affecting data validity and reliability.

  Longitudinal data from large panel studies do suggest that teacher satisfaction, wellbeing, and retention intentions may be associated with a supportive leadership. The only causal study that evaluates a leadership training programme found that teachers in schools where their principals were trained in effective leadership practices reported better relationship with colleagues and were more likely to stay in the school even after three years. However, because of the multi-component nature of school leadership practices, it is not possible to single out one specific attribute. A number of studies have suggested leadership empowerment is associated with positive of satisfaction and work commitment, but the evidence is weak. Giving teachers autonomy in decision making is empowering only if teachers perceived that such autonomy is accompanied by support from school leaders.

Direct Interventions to Enhance Working Environment:

- Classroom Management Strategies: These interventions are aimed directly at improving the working environment, including training teachers in effective classroom

management strategies. This can contribute to a more positive and conducive atmosphere for teaching and learning.

School leaders may have the potential to influence the working environment for teachers through school management. But we also looked at whether direct interventions to improve the working environment and teachers' classroom management skills can support teachers' wellbeing and job satisfaction. The evidence from these interventions did not yield substantial support to draw definitive conclusions. The majority of studies were rated at 1*, indicating weak evidence, while the more robust 3* studies showed no significant effects on teacher-reported well-being, burnout, or psychological distress.

Although school leaders play a pivotal role in shaping a positive organizational climate that is associated with teacher satisfaction and well-being, the direct influence of these interventions on individual teacher stress and self-efficacy remains uncertain. It is possible that impact on individual teachers' stress and self-efficacy cannot happen without also improvement in positive classroom behaviour. Other organizational factors, such as leadership support and broader changes in the professional landscape (e.g. change in school leaders, curriculum changes, statutory working hours and other educational reforms), may also have adverse effects on teacher well-being. These complexities suggest a need for a more nuanced understanding of how different factors interact and influence teacher satisfaction and well-being.

Professional Development:

- Competency Building: Another approach is to prioritise ongoing professional development to enhance teachers' competencies and skills. This can include training programmes, workshops, and initiatives aimed at advancing teaching practices and professional growth.

  The evidence for professional development, mentoring and induction for beginning teachers is also inconclusive. Some studies reported positive effects on teachers' job satisfaction, but not wellbeing. Others suggest positive effects on their self-efficacy, but no effect on teachers' decision/intention to stay in teaching. The long-term effect is also unclear. The strongest evidence shows that teacher professional development is effective in keeping teachers in the school, but not within district. It is also possible that the better teachers are in greater demand and are thus more likely to move, or be promoted.

RECOMMENDATIONS

Given the complexities and uncertainties identified in the current research, several recommendations can be drawn:

For research

Conceptualise Well-being: There's a need for a more comprehensive and nuanced understanding of wellbeing within the context of teaching. Clear definitions and models can aid in better assessment and targeted interventions.

Refined Wellbeing Assessment: Developing more precise and comprehensive methods to evaluate well-being among teachers would offer a clearer understanding of their needs and challenges. It may be useful for future research to specify the primary outcomes, so evaluations can focus on these outcomes, otherwise we have as situation where some outcomes report positive results while others do not.

Long-Term Approach: Acknowledge that significant changes in teacher wellbeing might necessitate longer durations to materialize. Long-term strategies could be trialled.

Trial interventions targeting leadership development

Designing policy interventions that specifically target and enhance leadership skills supportive of teachers, and then comparing their effectiveness in promoting job satisfaction and retention, would be a valuable step forward. This comparative analysis could shed light on the specific impact of leadership training or interventions on teacher satisfaction and retention, offering a more targeted approach to improving the overall work environment.

Preventative Measures: Prioritise proactive strategies over reactive ones. Identifying and addressing stressors before they significantly impact teachers' wellbeing might be more effective than trying to remedy the effects.

Mindfulness Training Caution: Exercise caution in recommending mindfulness training until more robust, independent studies confirm its efficacy. Current research shows mixed outcomes and potential biases.

Causal Research Focus: Encourage more robust research using causal designs to better understand the causal relationships between various interventions, school leadership, working environment, and teacher wellbeing. This approach could provide clearer insights into what truly affects teacher satisfaction and well-being.

These recommendations could help enhance our understanding of support systems for teacher wellbeing.

For teachers

Develop a support network

Teachers could build your own support network both inside and outside school. Sharing teaching resources, lesson plans, ideas classroom management strategies and experiences can help address workload and build camaraderie.

Seek own professional development

Teacher professional development need not be formally structured. Teachers could form their own learning network, set up a forum like Mumsnet where educators can share their experiences and good practices. They could join a research school hub (e.g. Maths Hubs). Teachers as researchers is a powerful professional learning tool. They can take control of their own professional development. This can be empowering.

For school leaders

There is a consensus among the studies in this review on five key attributes and practices in effective school leadership. These can be summarized as **SPACE:**

- **S**upportive
  School leaders need to be supportive in terms of providing resources, managing pupil behaviour and workload. They support and protect teachers from external pressures.

- **P**romote collegial collaboration
  A supportive working environment is also one where there is collegial collaboration among staff. An effective leader can facilitate this. There is evidence that teachers who have a positive relationship with their students and colleagues are happier with their job, and students whose teachers are content with their job also feel happier.

- **A**dvance professional development and professionalism
  School leaders could provide opportunities for teachers to develop their competencies and skills through workshops and training programmes, and cultivate leadership in others.

- **C**reate a positive school climate conducive to learning and teaching
  Effective school leaders create a positive school environment for learning and teaching, shaping a vision of academic success.

- **E**nhance open communication
  Effective leaders listen, are open to ideas and encourage shared decision-making. They are fair and consultative.

These attributes form a foundation for effective school leadership practices, though further research is needed to distinctly isolate their impacts on teacher well-being and job satisfaction.

For policymakers

Government could offer sabbaticals to teachers, e.g. in proportion to their length of service. This offers an opportunity for teachers to be re-charged. They can take this time to develop themselves, take up a course or to travel. However excellent an teacher may be, a break from the intensity of teaching is good for their wellbeing and job satisfaction, which increases their likelihood of staying on. Teaching is a very intensive job, and relentless pressure from the principal, parents and pupils can take a toll in the long run.

In some countries, for example, Singapore, every teacher is given a certain amount of funding, which they can use for professional development, e.g. subscription for professional magazines or membership of professional bodies, such as the Chartered College of Teaching.
Funding could be made available to release teachers to attend training on an area of their choice.

Ensure that school leaders receive adequate training in effective practices. Studies in this review have shown how important the role of school leaders is in creating a conducive working environment for teaching and learning. Professional development of school leaders to equip them with the knowledge and skills to create a supportive school culture may improve teachers' job satisfaction and retention.

CONCLUSION

Improving the status of teachers and making teaching an attractive profession is undoubtedly a significant challenge, especially when the image of teaching has been tarnished over decades. In countries like Finland and Taiwan, where there is no shortage of teachers, the high value and esteem attached to the teaching profession are deeply rooted in historical and cultural factors.

While monetary incentives are often used to address poor working conditions, studies consistently show that mere financial compensation is not a sustainable solution. The key role of school leaders in creating a positive working environment is a consistent finding, although predominantly derived from observational and correlational research. To gain a more comprehensive understanding of the dynamics influencing teachers' decisions, there is a need for rigorous, longitudinal analysis examining how different school principals within the same school impact teacher satisfaction over an extended period.

Approaches to enhancing teacher job satisfaction, self-efficacy, and well-being should be customized to the specific needs and contexts of the educational environment. Teachers, as the best ambassadors for their profession, can play a pivotal role in making teaching more attractive by fostering pride and happiness in their own roles.

Government support is crucial in making teaching an attractive profession. Shifting the focus from an accountability culture to a more supportive one may contribute to boosting professionalism. Emphasizing the selection and training of teachers and school leaders, and viewing Ofsted inspections and appraisals as developmental processes rather than judgmental ones, could foster a more positive and empowering educational environment. Reframing appraisals to be formative, offering constructive feedback, and avoiding stigmatizing labels for schools could contribute to a more positive and motivating atmosphere for teachers and school leaders.

LIMITATIONS

Interpreting the outcomes of studies evaluating teacher well-being and mental health is notably complex due to the diverse range of research designs, data collection methods, and measures employed to assess well-being. The reliance on self-reported data by almost all studies can skew results, often indicating positive feelings following interventions yet direct physiological indicators of stress and absence measures show no change. This suggests that teachers' well-being might be more psychological in nature.

Differentiating between types of retention (in school vs. in the profession) and intentions to leave versus actual attrition adds complexity.

In terms of the review process itself, the conclusions drawn heavily rely on the types of studies included in the synthesis. The search strategies, keywords, and criteria for inclusion/exclusion shape the identified studies, influencing the conclusions drawn. Systematic reviews often lack an assessment of the individual studies' quality, potentially leading to misleading conclusions. For instance, much of the research on school leadership is based on correlations, indicating associations but not causation. Teachers who are content with their job might naturally view their work environment and principals positively, making it challenging to determine causality between school leaders, school climate, and teacher well-being.

The scarcity of studies evaluating interventions to enhance school leaders' practices further complicates the issue. Fewer studies involve randomising school leaders to test the impact of interventions on school climate and teacher satisfaction. One randomised controlled trial (RCT) by Jacob et al. (2015) found a small effect on teachers' perceptions of principals' leadership. Schools where principals received training had higher teacher retention rates.

In essence, the challenges lie in the limitations of study designs, reliance on self-reported data, and difficulties in isolating causation in understanding the intricate relationships between school leadership, work environment, and teacher well-being. Improving research methodologies is needed for clearer, more reliable insights into this complex landscape.

As with any review of this scale, it is possible that some studies may have been missed. The keywords used in the search and the order/sequence in which these keywords are inputted into the electronic databases may influence the kinds of studies picked up. Thus, the evidence here cannot be exhaustive.

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