



Review Article

Perspective-taking by teachers in coping with disruptive classroom behavior: A scoping review

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ABSTRACT

Primary school teachers experience heavy workloads coping with pupils' disruptive classroom behavior. Teachers' interventions are mostly child-oriented, with often minimal influence on pupils' behavior. Teachers changing their views by perspective-taking may be more effective in handling disruptive classroom behavior.

This scoping review explores the available scientific studies concerning primary school teachers' perspective-taking in coping with pupils' disruptive classroom behavior and its impact.

Four online databases identified 1791 records and six studies, revealing promising directions on this understudied topic. Teachers' perspective-taking concerning coping with disruptive classroom behavior is an important topic that deserves further exploration, especially given the potential benefits of decreased classroom exclusion and increased academic success.

1. Introduction

Teachers find disruptive classroom behavior challenging (Aloe et al., 2014; Hofstetter & Bijstra, 2014; Mullis et al., 2019; van Grinsven & van der Woud, 2016). This experience not only affects their feelings of professional effectiveness in teacher-child interactions but also negatively impacts the well-being and development of pupils with these challenging behaviors. Over the last decades, the incidence of mental disorders associated with disruptive behavior increased dramatically (Batstra et al., 2012; Visser et al., 2010).

In addition, the exclusionary practices, like suspensions, raised dramatically because of pupils' disruptive classroom behavior (LiCalsi et al., 2021), just like referrals to special education or alternative schools (Bakker, 2015; Ministry of Education, 2020; Pijl, 2016). Welsh and Little (2018) state that exclusionary school discipline practices are occurring at alarming levels. These practices negatively impact the pupils' learning outcomes, and it impacts their ability and chances to cope with

societal challenges (Batstra et al., 2012; Bloemink, 2018; Bryan et al., 2012; Carrell et al., 2018; Gilbert, 2019; LiCalsi et al., 2021; Richards, 2012; Rubie-Davies, 2006; Welsh & Little, 2018). In addition, how teachers cope with disruptive behavior impacts the emotional states of teachers and their pupils (Aloe et al., 2014; Bru et al., 2002; LiCalsi et al., 2021; Richards, 2012; Reyes, 2006; Spilt & Koomen, 2010; Spilt et al., 2011).

Educational systems rely on the abilities of teachers to organize a learning environment for all pupils and to handle pupils' disruptive classroom behavior. The vast amount of available research about disruptive classroom behavior involves prevention, interventions, assessment, classroom management, and teachers' views. Nevertheless, disruptive behaviors remain a substantial problem. A fundamental element may be the teacher's perspective-taking and the interpretation of observations when confronted with a pupil's disruptive behavior. The starting point of judging behavior and coping is how teachers see and analyze the behavior, the perspectives a teacher takes, and the quality of

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perspective-taking that influences decision-making (Gehlbach & Vriesema, 2019).

1.1. Teachers

In general, teachers' self-efficacy (e.g., trust in one's capabilities; Bandura, 1993) to improve disruptive classroom behavior is limited (Brouwers & Tomic, 2000, 2008; Lanza, 2020). Self-efficacy is associated with qualitative classroom management practices and teachers' emotional exhaustion (Jillson, 2020).

Teachers experience a heavy workload in supporting children with disruptive behavior (Ledoux & Waslander, 2020), often increasing stress and harming teachers' well-being (Kokkinos et al., 2005; Mahvar et al., 2018; Spilt & Koomen, 2010). Positive relationships with pupils appear not to compensate for negative relations with other pupils (Spilt & Koomen, 2010). Furthermore, the teachers' negative feelings adversely affect their interactions with the child (Batstra et al., 2012; Gehlbach, 2017; Gläser-Zikunda & Füss, 2008; Morris-Rothschild & Brassard, 2006; Sandilos et al., 2018; Stuhlman & Pianta, 2002). The teachers and pupils end up in a negative feedback loop that does not limit itself to the interactions with that particular child but affects all pupils (Jennings & Greenberg, 2009; Jeon et al., 2016; Whitaker et al., 2015). When teachers believe they have several children with behavioral problems, they likely tend to negatively assess other pupils' behavior (Wienen, 2019). Also, there may be a link between conflictual teacher-pupil relationships and pupils' emotional and behavioral difficulties (Poulou, 2017). In contrast, solid social bonds reduce children's vulnerability (Burskens et al., 2019).

1.2. Disruptive classroom behavior

Disruptive classroom behavior varies on a continuum of behavior in which pupils engage up to behavior that harms the educational program and school safety (Ladd, 1971). Koskela and Lanas (2016) identified six categories of disruptive behavior: physical absences, restlessness, aggression or other negative feelings, disobedience, rule-breaking, unsatisfactory participation in schoolwork, and unsocial behavior.

Teachers interpret behavior based on rules, norms, and values (Ploeg, 2011). Teachers' experiences, professionalism, and school culture from the rules, norms, and values they have incorporated (Riojas-Cortez et al., 2013). Also, society's norms and values play a crucial role in what teachers experience as disruptive (Koskela & Lanas, 2016); consequently, a paradigm change may result in a different perspective of what is disruptive (Verhaeghe, 2020). Additionally, the prevalence and characteristics of the behavior may vary and depend on the informant who provides the information (De Los Reyes & Kazdin, 2005).

1.3. The pupil with disruptive behavior

In general, pupils with disruptive classroom behavior show limited academic performance (Gilbert, 2019; Rubie-Davies, 2006), and teachers' competencies impact students' well-being and their emotions (Bryan et al., 2012; Buttner et al., 2015; Gläser-Zikunda & Fuß, 2008; Jeon et al., 2016). In addition, negative school experiences may induce social exclusion (Vettenburg & Walgrave, 2017), limiting the pupil's opportunities in society (LiCalsi et al., 2021; Ministry of Education, 2020; Welsh & Little, 2018). Moreover, disciplinary measures do not reduce undesirable behavior or improve positive student changes. (LiCalsi et al., 2021; Ministry of Education, 2020).

Pupils' problematic behaviors are often due to context factors and social interactions instead of child-related factors (Burskens et al., 2019). In some cases, the classification of a disorder may induce stereotyped views of a pupil's behavior (Batstra et al., 2012; Batzle et al., 2010; Gehlbach & Vriesema, 2019). This labeling bias may provoke teachers to have lower expectations of children with behavior problems (Bakker & Bosman, 2006; Batzle et al., 2010). These lower expectations harm these

children's motivation, self-efficacy, and learning experiences and lead to unpropitious social perspectives (Batzle et al., 2010; Meerman et al., 2017; Vettenburg & Walgrave, 2017).

1.4. Coping

The goal of coping strategies is to solve interpersonal problems and minimize stress (Gilbert, 2019; Krohne, 2001; Mahvar et al., 2018). In a systematic review, Mahvar et al. (2018) identified several coping strategies of teachers for disruptive classroom behavior, including cooperative and problem-solving strategies, avoidance strategies, and punishment strategies. In addition, biases and preferred attributions play an essential role in coping strategies (Gehlbach & Vriesema, 2019). Two mechanisms sacrifice accuracy in a person's perception: one is protecting our self-perception, and the other is preventing ourselves from a cognitive (memory) overload by making mental shortcuts (Apperly, 2018; Gehlbach & Vriesema, 2019; Surtees & Apperly, 2012).

It is part of life that our personal perspective, and sense of self, is egocentrically biased, so-called egocentrism or egocentric errors (Apperly, 2018; Epley et al., 2004; Gehlbach & Vriesema, 2019; Surtees & Apperly, 2012). Both mechanisms occur especially in coping with complex tasks (Gehlbach & Vriesema, 2019; Surtees & Apperly, 2012). Therefore, the teachers cannot be blamed that their perspectives will interfere while judging the behaviors of others (Gehlbach & Vriesema, 2019; Surtees & Apperly, 2012).

Weiner's Attribution Theory (1986, 2000, 2010) implies that attributions influence coping; self-directed thoughts, emotions, and beliefs direct teachers' judgment and decision-making. Teachers often interpret pupil behavior from internal child-related factors (Armstrong, 2014; Koskela & Lanas, 2016; Wang & Hall, 2018). Due to this external (child-orientated) attribution, the interventions' focus is to adjust the pupil's problematic behavior and use retributive goals (Almog & Shechtman, 2007; Batstra et al., 2012; Burskens et al., 2019; Vettenburg & Walgrave, 2017; Wang & Hall, 2018). The tendency to neglect the social variables and pin the cause of someone's behavior primarily on the person himself is known as 'the actor-observer phenomenon' (Jones & Nisbett, 1972). These attribution preferences may explain the rise in referrals for special aid (Meerman et al., 2017; Wienen, 2019). Exclusionary practices are possibly better explained by teachers' and principals' interpretation biases than students' misbehavior (Welsh & Little, 2018).

Attribution of disruptive behavior to child-related factors may affect the teacher's academic expectations of the pupil and influence their coping accordingly. The role of self-fulfilling prophecies and expectancy effects is common ground in education (Gehlbach & Vriesema, 2019). Many studies followed the famous Pigmalion-in-the-classroom study executed by Rosenthal & Jacobson in 1968 (Rosenthal, 1994; Rubie-Davies, 2006). "Teachers appear to teach more and more warmly to students for whom they have more favorable expectations" (Rosenthal, 1994, p.178). Teachers who attribute the misbehavior to internal stable child factors report more maladaptive teaching behaviors (e.g., expressing anger or sarcasm), and teachers who make context-related attributions report greater sympathy and willingness to improve their teaching strategies (Wang & Hall, 2018).

Increasing evidence shows that students' self-perception and academic and social skills development alter according to teachers' expectations (Rubie-Davies, 2006). Teachers' expectations impact their teaching, students' motivation, and learning opportunities (Jussim & Eccles, 1992; Rosenthal, 1994; Rubie-Davies, 2006). Also, teachers' expectations influence the way peers think about their classmates (Wang & Hall, 2018).

It is crucial to overcome inaccurate causal attributions and persistent stereotypes because the teacher's perspective is a powerful predictor of school success (Bryan et al., 2012). Therefore, meta-awareness of their identity, values, beliefs, and expectations is essential for teachers' coping choices (Batzle et al., 2010; Riojas-Cortez et al., 2013).

1.5. Perspective-taking

Perspective-taking refers to a meta-awareness of perspectives from an alternative point of view, an object, another person, or a culture with different attributions (Galinsky et al., 2008). Perspective-taking is a process that cannot happen without knowledge and mental imaging (symbolic or depictive representations) (Cole & Millett, 2019). Switching perspectives generate better decisions than otherwise would be produced (Gehlbach & Vriesema, 2019; Lobchuk, 2006; Lobchuk et al., 2007; Yaniv & Choshen-Hillel, 2012) and can boost the relationship (Galinsky & Moskowitz, 2000; Gehlbach & Vriesema, 2019; Lobchuk, 2006; Lobchuk et al., 2007).

Perspective-taking is slower than the automatic process of taking the self-perspective (Epley et al., 2004; Kahneman, 2011; Surtees & Apperly, 2012). Taking the other one's perspective costs extra energy, judgment time, and memory load and is therefore not something people automatically do (Apperly, 2018; Cole et al., 2016; Cole & Millett, 2019; Epley et al., 2004; Surtees & Apperly, 2012; Yaniv & Choshen-Hillel, 2012). People have to be motivated and in a relatively good mood to switch perspectives (Apperly, 2018), especially when the other's perspective is very different from one's own (Samuel et al., 2020; Surtees & Apperly, 2012).

A person can never be sure if the other's taken perspective is correct, whether the bias gap is closed because the sense of self is privileged ground, and the taken perspective stays an interpretation (Apperly, 2018; Cole & Millett, 2019). Nevertheless, perspective-taking can decrease biases, increase accuracy, improve equal consideration of all informants, and increase empathy and feedback-seeking (Apperly, 2018; Galinsky et al., 2008; Galinsky & Moskowitz, 2000; Goldstein et al., 2014; Lobchuk, 2006; Sherf & Morrison, 2020; Yaniv & Choshen-Hillel, 2012).

Perspective-taking seems beneficial for teachers coping with "disruptive" classroom behavior in more than one way. So the question arises, what kind of perspectives do teachers take in coping with pupils' disruptive classroom behavior, and how does this perspective-taking impact their coping with pupils' disruptive classroom behavior?

A scoping review examines the extent, range, and nature or possible knowledge gaps of teachers' perspective-taking research in education concerning coping with pupils' disruptive classroom behavior. This scoping review aims to determine the available scientific knowledge on this topic and map the measured impact of teachers' perspective-taking on their coping with pupils' disruptive classroom behavior.

2. Method

In preparation for this review, a search test was executed in July 2020. This exploration indicated that the available research literature would be small and difficult to find. For this reason, the systematic search needed a broader scope than the traditional systematic review, with search strings of high quality. Gathering systematic scientific knowledge on a topic is the first step to warrant more in-depth exploration and understanding (Munn et al., 2018).

2.1. Protocol and registration

The research team and information specialist developed a protocol in advance and published it online (Ottenheim et al., 2021). The fundament of the protocol is The PRISMA extension for scoping reviews (Tricco et al., 2018). The protocol development was an iterative process to secure the high quality and broad scope of the search to find relevant studies.

2.2. Eligibility criteria

The following eligibility criteria are used to select relevant studies. First, studies on the population of the study had to focus on primary

school teachers working with pupils from 4 until 13 years. Second, teachers in the study are confronted with pupils' disruptive behavior in the classroom. Spilt and Koomen (2010) state that pupils' disruptive classroom behavior impacts teachers in primary schools more negatively than in other education types. Third, the study includes a measure of teachers' perspective-taking coping with pupils' disruptive behavior. Fourth, the study described the relationship between teachers' perspective-taking and coping with disruptive behavior. Fifth, the study has to be presented in English. Sixth, the conclusions in the study are based on qualitative or quantitative data. Systematic reviews are included. Excluded are background information or expert opinions. Finally, the study needed to be published in a peer-reviewed journal or available as a full-text dissertation.

2.3. Search

The first and second authors developed the search strategy with an information specialist with input from the third and fourth authors. It was an iterative process to ensure a comprehensive broad search strategy within the boundaries of the research question with all essential elements and overcoming false-negative hits. The search was executed a second time at the end of the data analysis process to ensure that the review included the most recent articles. The following databases were selected: Eric (EBSCO), PsycINFO (EBSCO), Web of Science, and Sociological Abstracts.

2.4. Search strings

Based on the characteristics of every database, search strings were developed. The search strings consisted of a combination of thesaurus terms, keywords, descriptors, synonyms, related terms, and other free-text terms representing the concepts of "disruptive classroom behavior" AND "perspective-taking" AND "primary school teachers" OR "school children between the age of four and thirteen." These terms were combined with the help of Boolean operators.

The search strings were tested to find the best possible scope and fit within the PICOS framework. The first search string was developed within ERIC. Additionally, this tested search string was adjusted to match the Thesaurus of PsycINFO. This step revealed new search options and is again tested in ERIC and PsycINFO. This procedure has given search strings with the best possible scope in ERIC and PsycINFO. The same procedure was followed within all databases. This iterative process of development and testing created the best possible search strings. The first author and the information specialist executed this process and checked with the other authors. (Request search strings with the first author). The used search strings are presented in Appendix A.

The search was executed in title, abstract, and subject descriptors. Search filters like language, peer-reviewed, or date were not used to overcome a search bias. The deduplication was executed after the record extraction according to Bramer et al.'s protocol (2016). Two searches took place in March and December 2021.

2.5. Selection of sources of evidence

Concerning the inclusion and exclusion criteria, the first and second screeners screened independently and blinded all titles and abstracts of all uniquely identified records in Rayyan (QCRI; Ouzzani et al., 2016). All excluded studies are labeled in Rayyan with reasons for exclusion. The main reason was no match with teachers' perspective-taking.

After the first screening, the second author independently reviewed a sample of 205 records randomly blinded to the other two screeners' decisions. The results are discussed to reach full consent between the screeners and the second author regarding the excluded and included records.

2.6. Data charting and analysis

The data extraction framework entails bibliometrics with general descriptions (authors, country study/published, year of publication, type of paper, aim, study design, quality check) and information about:

1. Disruptive behavior: used description, measurement, and informant.
2. Coping: used description, measurement, and informant.
3. Perspective-taking: used description, measurement, and informant.
4. Perspective-taking concerning disruptive behavior.
5. Perspective-taking concerning coping.

Subsequently, data are extracted and stored in Zotero, and a table is provided for comparison. The first author executed the charting, and it was verified by the second. Finally, the research team discusses data and analyses, and uncertainties and disagreements are resolved by consensus.

3. Results

One thousand seven hundred ninety-one screened records resulted in fourteen for full-text screening. Fig. 1 displays the screening process with the number of rejected articles in each stage. Nine of the fourteen studies did not match the inclusion criteria. Reasons to exclude were no measurements of teachers' perspective-taking, no disruptive pupil behavior, or an expert article. The second author screened the excluded studies. The research team reviewed the decisions with consensus in all cases. The excluded studies have the following themes: Teachers understanding of the concept on-task (Johnston, 1985), Improving teacher perceptions of their students by a consulting-driven prereferral

intervention (Fuchs et al., 1990), Rogerian non-judgemental and non-threatening interview approach to increase the expression of child's perceptions (Knox, 1992), Construction of an integrated model of the nature of challenging behavior: behavior-in-context approach (Lyons & O'Connor, 2006), Internality-norm theory in education and scholastic judgment (Pansu et al., 2008), The performative reinscription in pedagogic relationships in the classroom – exclusionary schooling practices (Teague, 2015), Exploration of teacher understanding of empathy and its expression in relationships with pupils (Kim, 2017), The emotional availability and insightfulness of the caregiver, and children's social information processing and social behavior (Ziv et al., 2018), Taking up children's words, gestures, and moves as knowledge; the nature of challenging behavior – behavior as a response to the environment (Yoon & Templeton, 2019). In addition, hand-searching delivered one additional study from Okonofua et al. (2016) that could be included after the full-text screening.

3.1. Descriptive overview

The systematic selection resulted in six included studies: two dissertations from 2010 and 2017 and four articles published in peer-reviewed journals in 2015, 2016, 2019, and 2021. Appendix B, Table B presents the general descriptions of the studies. Five out of six were conducted in the US. The studies differ in the number of included teachers (8–178) and pupils (14–1682).

Though the studies vary in aim and design, the motivation was similar: concerns about the impact of disruptive behavior on pupils' school success and teachers' well-being. The Dutch study is a Randomized Controlled Trial (RCT) to investigate the effect of a teacher-focused coaching intervention (Hoogendijk et al., 2019). Underwood (2010)

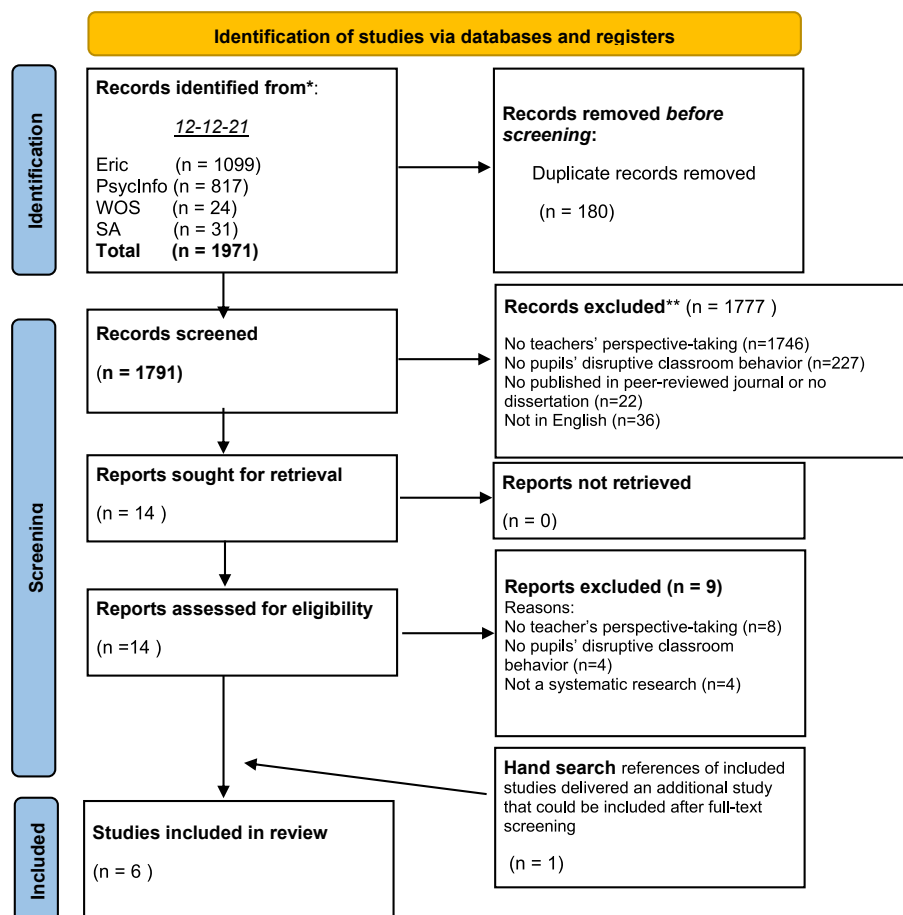


Fig. 1. PRISMA flow diagram for new systematic reviews (2020)

investigated in a cross-sectional study the correlation between two independent variables; the number of bullying incidents and the empathic tendencies of teachers. With a mixed-method design, Jennings (2015) explored the occurrence and relationship between teachers' well-being, mindfulness, self-compassion, dimensions of classroom quality, and teachers' attitudes in coping with a challenging student. McKnight's embedded mixed-method case study (2017) focuses on teachers' partnering skills with families of students with disruptive behavior and at risk for social- and emotional disorders with teacher-focused coaching. Okonofua et al. (2016) executed three experiments with a mix-method experimental field design to investigate what would happen when teachers' mindsets changed from punitive to empathic. The third experiment used a brief online randomized intervention for teachers. At last, Wink et al. (2021) conducted a survey to validate an adapted teachers' empathy instrument and investigated the relationship between teachers' empathy and their beliefs and practices regarding challenging student behavior.

In five of the six studies, teachers' perspective-taking is not the primary subject. Only Wink et al. (2021) investigated perspective-taking as part of empathy. All studies included classroom teachers in their study population, with different cohorts of pupils ages: 3 until 5, 5 until 8, 6 until 9, and 11 until 14. Okonofua et al. (2016) used different populations of different ages in two experiments and included children from 11 to 14 in their third experiment.

A check on quality aspects resulted in a positive impression of all studies. For example, most measurements had psychometric evidence, and the researchers were transparent in their methods and analyses.

3.2. Description and appraisal of key terms in sources of evidence

3.2.1. Disruptive classroom behavior

Congruent to the literature, the description of disruptive behavior differs in the six studies. However, the similarity is the focus on externalizing behavior. Researchers' motivation: the behavior is challenging for teachers, the behavior influences the classroom learning environment, the interaction between the teacher and student(s), teachers' well-being, or the student's learning outcomes.

Hoogendijk et al. (2019) and McKnight (2017) focused on externalizing problem behavior rated with validated instruments for selecting teachers' dyad students. Hoogendijk et al. (2019) used the Strengths and Difficulties Questionnaire for Teachers (SDQ-T, Van Widenfelt et al., 2003) and the Student-Teacher Relationship Scale - Conflict subscale (Koomen et al., 2007) as an operationalization of the conflictual relationships. McKnight (2017) used Social Skills Improvement System (SSiS, Gresham & Elliott, 2008) to pinpoint at-risk students who scored in high ranges on externalizing behavior. However, both studies used the rating instruments only for selection, not to measure the effect. However, Wink et al. (2021) used the SDQ-T not for selection but as an outcome measurement.

Underwood's (2010) topic was bullying behavior according to the definition of Olweus of bullying and the Olweus Bullying Questionnaire (OBQ; Olweus, 2007) with students as informants. However, Jennings (2015), Okonofua et al. (2016), and Wink et al. (2021) used a more open description of disruptive classroom behavior and did not assess the conduct by a validated instrument. Instead, Jennings (2015) and Wink et al. (2021) focused on the challenging behavior as experienced by the teacher and Okonofua et al. (2016) on students' misbehavior that needs an intervention from the teacher.

In five studies (Hoogendijk et al., 2019; Jennings, 2015; McKnight, 2017; Okonofua et al., 2016; Wink et al., 2021), the point of departure is how teachers perceive students' behavior. Teachers are the only informants; the studies used no triangulation. Although, Hoogendijk et al. (2019) and McKnight (2017) used a validated instrument for selection. The perception of behavior can differ among informants, like teachers, students, and parents (De Los Reyes et al., 2013, 2015; De Los Reyes & Kazdin, 2005; Van Doorn, 2019). In addition, what teachers perceive as

disruptive pupil behavior varies among teachers (Koskela & Lanas, 2016; Riojas-Cortez et al., 2013; Redl, 1975).

At last, where Hoogendijk et al. (2019), McKnight (2017), and Underwood (2010) perceive disruptive behavior as a characteristic of the child, Jennings (2015), Okonofua et al. (2016), and Wink et al. (2021) describe it as a characteristic of teachers' perception. Nevertheless, all the studies mention teachers' critical role in coping with pupils' disruptive behavior.

3.2.2. Coping

All studies agree that how teachers cope with disruptive classroom behavior matters for these pupils.

For example, teachers can help disclose bullying victimization (Underwood, 2010). Furthermore, teachers' interactions and capacity to build positive relationships are considered vital for supportive learning environments and pupils' development (Hoogendijk et al., 2019; Jennings, 2015; Okonofua et al., 2016; Wink et al., 2021). In addition, McKnight (2017) mentions that the teachers' role is crucial in the home-school partnership to prevent behavioral disorders, and Wink et al. (2021) also point out the impact of teachers' empathic distress.

The studies do not provide a clear description of coping. However, they investigate strategies for contending with disruptive behavior and teacher characteristics that influence coping.

The investigated strategies are building relationship strategies (Hoogendijk et al., 2019; Jennings, 2015; Wink et al., 2021), classroom organization strategies, and pedagogical strategies (Hoogendijk et al., 2019; Jennings, 2015), teaching strategies for responsive partnerships with students' families (McKnight, 2017), empathic strategies (Underwood, 2010; Wink et al., 2021), disciplinary strategies (punitive or empathic) (Okonofua et al., 2016), and collaborative problem-solving strategies (Wink et al., 2021).

Except for Underwood (2010), all studies mention factors influencing coping. Okonofua et al. (2016) mention teachers' empathic or punitive mindsets that influence the misbehaving student's approach. The other studies give more operationalizations of teachers' mindsets and internal processes like the mental representation of the relation (Hoogendijk et al., 2019), internal working models of expectations, feelings, and interpretation of another's behavior (Hoogendijk et al., 2019; Jennings, 2015; Wink et al., 2021). In addition, McKnight (2017) sees the role of teachers' barriers in communication, awareness of automatic thoughts, reframing negative situations and problems, and teachers' interest in families' backgrounds and cultures as influencers. Finally, teacher personal variables are explored, such as well-being, mindfulness, self-compassion (Jennings, 2015), self-efficacy, burnout (Jennings, 2015; Wink et al., 2021), and empathic distress (Wink et al., 2021).

The coping measurements and operationalizations differ between the studies because of the variation in aims (Appendix B, Table B, general descriptors of included studies).

In all studies, the teacher is the leading source for measuring teachers' coping, and the main instrument is a validated questionnaire or semi-structured interview. Hoogendijk et al. (2019) and Okonofua et al. (2016) measure the student perspective on teacher interactions. In addition, Hoogendijk et al. (2019) and Jennings (2015) used a validated teacher-student interaction observation instrument (CLASS, Pianta et al., 2008; 2012), where the researchers rated the observations. Okonofua et al. (2016) also used quantitative suspension rate data from official school records. The common ground in all studies is that the researchers mainly start from teachers' perspectives.

3.2.3. Perspective-taking

All studies describe perspective-taking as presented in Appendix C, Table C. However, the studies incorporate it differently.

All the descriptions mention the other one's viewpoint as a part of perspective-taking. McKnight (2017) distinguishes between the concepts of empathy and perspective-taking by saying that

perspective-taking does not necessarily lead to emotional feelings, whereas empathy does. Underwood (2010) and Okonofua et al. (2016) agree with McKnight that taking the perspective of the other is a cognitive capacity. Wink et al. (2021) underscore this difference by mentioning that perspective-taking is cognitive, and affective empathy is the emotional response regarding someone else's emotional experience.

The studies viewed a specific single perspective taken by teachers; McKnight (2017) is interested in teachers' perspective-taking of the student families, and the other studies are interested in teachers' perspective-taking of the student.

All studies highlight the positive role of teachers' perspective-taking in coping with disruptive behavior. Hoogendijk et al. (2019) state that perspective-taking stimulates the focus on positive-interaction skills and activates teachers' conscience of students' interaction needs and the urge to fulfill these needs. Jennings (2015) sees perspective-taking as a necessary competency for supportive relationships and responsible decision-making. Okonofua et al. (2016) state that taking a student's perspective influences teachers' reaction to misbehavior positively with a greater awareness of students' needs, and Underwood (2010) refers to Craig et al. (2000) that perspective-taking makes it more likely that teachers identify bullying and intervene. McKnight (2017) argues that perspective-taking as part of reflective thinking is vital to overcoming implicit biases and reframing negative situations and problems in opportunities. With that, a teacher can build a strength-based approach toward the families of students with disruptive behavior (McKnight, 2017). Additionally, Wink et al. (2021) state that affective empathy and perspective-taking may play a critical role in social-emotional functioning in helping and caring professions like teaching.

In Hoogendijk et al. (2019), McKnight (2017), and Okonofua et al. (2016), teachers' perspective-taking was part of the intervention. The other two studies measure the occurrence of teachers' perspective-taking.

Jennings (2015) measured teachers' awareness of a student's perspective with the Teacher Relationship Interview for coaching (TRI; Stuhlman & Pianta, 2002) and found above moderate evidence of the construct (*Mean* 4.46, *SD* 1.15 on a coding scale of 1–7). Underwood (2010) used the Interpersonal Reactivity Index (IRI; Davis, 1996) developed for general use, not primarily for teachers. The instrument inquires about the thoughts and feelings in various situations, and perspective-taking is one of the four subscales. At last, Wink et al. (2021) developed a new survey instrument to measure teachers' empathy in the school context because there was no existing instrument. The researchers combined two existing general instruments: Davies IRI and the Empathy Quotient (Baron-Cohen et al., 2003). The new Cognitive and Effective Empathy questionnaire (QCAE, Wink et al., 2021) revealed two new scales after factor analysis with psychometric support: Cognitive Empathy (current and future perspective-taking) and Empathic Distress.

The other studies focus on teachers' perspective-taking as a part of their intervention.

Hoogendijk et al. (2019) used the Teacher Relationship Interview for Coaching (TRI-C/LLinC; Koenen et al., 2019; Spilt & Koomen, 2010; based on TRI; Stuhlman & Pianta, 2002) where perspective-taking is one of the nine pedagogical and emotional construct subscales. Furthermore, during the Key2Teach teacher-focused coaching intervention, a coach translated the results of TRI into a unique profile, including the strengths and weaknesses of perspective-taking (Hoogendijk et al., 2019; Key2-Teach Dutch Training manual, Van Veen et al., 2015). This profile aimed to stimulate the teacher to take the students' perspective during the intervention. However, the profile and coaching plans were not part of the described measurements.

Also, McKnight (2017) used a teacher-focused coaching intervention that embedded teachers' perspective-taking of the students' families. As part of a home-school partnership protocol, the coach assessed the engagement levels between the teacher and the student's family. The assessment method was a weekly semi-structured interview during a 15

weeks intervention period. The study used the CARES framework that focuses on teachers' skill sets and students' families' engagement in a systematic, iterative process that guides teachers in an individualized way to engage a family (McKnight, 2017).

The third CARES component, Reflective Thinking, targets the teachers' racial and cultural barriers through self-reflection on their attitudes to check implicit biases and use a strengths-based approach (McKnight, 2017). An example of perspective-taking as part of reflective thinking: "if a teacher is frustrated that a parent is not returning her phone calls, the reflective thinking component encourages the teacher to take the family's perspective on why it may be challenging for the parent to return the call." (McKnight, 2017, p. 62–63). The researcher used the insights gained from each teacher during the coaching sessions as teacher case studies.

In the Okonofua et al. (2016) study, taking a student's perspective is crucial in brief online intervention, stimulating an empathic mindset. The intervention encouraged understanding and valuing misbehaving students' perspectives. The intervention recalled teachers that students who feel heard, valued, and respected will feel that school is fair and that students can grow and succeed there. It also discouraged the labeling of misbehaving students as troublemakers. As part of the intervention, teachers reflected on incorporating these ideas into their practice. The researchers coded the responses and concluded that the teachers echoed the empathic intervention strongly.

In all studies, the teacher was the informant of the degree of teachers' perspective-taking.

The aim, method, and measurement of the six studies differ. Therefore, the results of teachers' perspective-taking on coping with disruptive classroom behavior have to be valued within the context of each study.

Underwood (2010) hoped to find that teachers' perspective-taking influenced their coping in such a way that the students would report lower levels of bullying incidents; the study found no correlation between teachers' self-reported level of empathy or the level of the subscale perspective-taking and the level of reported bullying incidents by students.

Jennings (2015) explored the naturally occurring variation of independent teacher variables and the relation between those independent variables. The study found no correlations between perspective-taking, self-compassion, personal and teaching efficacy, positive and negative affect, depression, and burnout.

Perspective-taking correlates significantly ($r = 0.37, p < .05$) with the mindfulness factor Observe (FFMQ; Baer et al., 2006). Observe is the ability to notice thoughts, feelings, and physical sensations. It may help look at a challenging situation from a broader perspective (Jennings, 2015). In addition, the scores of the top and bottom quartile on the composite mindfulness differ significantly on the mean levels of perspective-taking ($M = 4.90$ and $M = 3.63$, respectively $t(16) = 2.63, p < .05$). So, there is a tendency when teachers are mindful that they score higher on perspective-taking (Jennings, 2015). The participants with the highest quartile on the summary measure of the FFMQ mindfulness also showed significantly higher emotional support levels on the CLASS than teachers who scored within the lowest quartile (Jennings, 2015). The study did not explore the relationship between emotional support and teachers' perspective-taking of a challenging child.

In the study of Hoogendijk et al. (2019), teachers' perspective-taking of the dyad student with externalizing problem behavior was part of the coaching intervention but not part of the dataset. Therefore, the influence of teachers' perspective-taking on coping with dyad pupils' externalizing problem behavior is unclear. Furthermore, Key2Teach did not affect the teachers' interaction skills. The researchers assume that this relates to the study design. However, the intervention significantly affected teachers' mental representation of closeness and conflict relationship scores (STRS: Koomen et al., 2007). Hoogendijk et al. (2019) state that Key2teach can improve teacher closeness in the relationship with students with externalizing problem behavior, and the findings

underscore the value of reflection. Nevertheless, the impact of teachers' perspective-taking is unclear.

McKnight (2017) found a decreased number of barriers for teachers to partner with the student's family and an increased or remaining level of communication strategies for seven out of eight teachers. Also, the study showed an overall increase in the teacher scores on the family-teacher involvement questionnaire (INVOLVE-T; Webster-Stratton et al., 2001), which may indicate a more positive perception of the families. Altogether, McKnight (2017) states that teachers showed success or progress in their attempts to partner with their students' families, but that was not the result of teachers' perspective-taking alone but the entire coaching intervention.

Also, Okonofua et al. (2016) stimulated teachers in a brief online intervention to take the misbehaving student's perspective. The researchers found that the intervention halved the year-long student suspension rates and bolstered the respect of the most at-risk and previously suspended students for their teacher. The researchers state that they identified, with the use of a chain of experiments, key causal relationships between empathic mindset, treatment to greater feelings and perceptions of respect, and reduced suspensions (Okonofua et al., 2016).

Wink et al. (2021) found that higher cognitive empathy (perspective-taking) is associated with a closer relationship with teachers' challenging students, more competence in handling problem behaviors, more positive mindsets about student behavior, and more successful conflict resolution strategies. However, teachers' perspective-taking did not predict the reported student behavior difficulties. Last but not least, the researchers found that teachers' perspective-taking is negatively related to burnout.

3.3. Synthesis of results

3.3.1. What kind of perspectives do teachers take in coping with pupils' disruptive classroom behavior?

None of the studies explored the perspectives teachers take. Instead, they predetermined one single type of teacher's perspective-taking. Specifically, five of the six studies focus on teachers taking the problematic behaving students' viewpoints; one study by McKnight (2017) chooses to focus teachers' perspective-taking on the family of the pupils with chronic externalizing problem behavior at risk for disorders. Whether teachers also took another perspective (e.g., classmates, remedial educationalists, colleagues, or the school situation) is not investigated.

3.3.2. How do teachers' perspective-taking impact their coping with pupils' disruptive classroom behavior?

All studies expected that teachers' perspective-taking positively impacts teachers coping; it would benefit social interaction and responsiveness.

None of the studies investigated the question, "How impacts teachers' perspective-taking their coping with pupils' disruptive classroom behavior?".

The studies with an experimental design (Hoogendijk et al., 2019; McKnight, 2017; Okonofua et al., 2016) give indications of the impact of teachers' perspective-taking on their coping, and the studies with a correlational design (Jennings, 2015; Underwood, 2010; Wink et al., 2021) give directions on the relationship between teachers perspective-taking and coping.

In the intervention studies of Hoogendijk et al. (2019) and McKnight (2017), teachers' perspective-taking was part of a multiple intervention package. Both focused on and measured the intervention effect as a whole. Therefore the measured impact of these interventions can not be attributed alone to teachers' perspective-taking. Okonofua et al. (2016) integrated teachers' perspective-taking to create an empathic mindset.

The interventions positively affected the teacher-pupil/family relationship, increased the use of the teachers' communication strategies, and decreased suspension rates.

The intervention, Key2Teach (Hoogendijk et al., 2019), showed no effect on teachers' interaction skills, but it significantly positively affected closeness and conflict mental representation. Nevertheless, it remains unclear if the effect is caused by activating the pupils' perspective; the perspective-taking data were part of the coaching and not used as outcome data.

During the intervention period, teachers in McKnight's (2017) study were stimulated to take the perspective of the student's family. The study found the following overall effects: seven out of eight teachers had a decrease in the number of experienced barriers in partnering, the number of communication strategies increased, they saw more positive perceptions of the families, and the Home-School Partnership goals were met for ten of the fourteen students. In addition, four teachers saw positive effects in the classroom because of the partnering; two teachers experienced increased classroom involvement, and two teachers saw improvements in their student behavior. It is unclear if the effects on coping result from teachers' perspective-taking. The coaches stimulated teachers to take the family's perspective and reflect and reframe their point of view. The researcher concluded that the role of the coaches was important for teachers' partnering with their students' families.

Okonofua et al. (2016) study stimulated an empathic mindset but did not measure if the teachers got this mindset and used it to cope with misbehavior. However, the teachers strongly echoed the intervention themes in their questionnaire during the intervention. In addition, the intervention had a significant impact on teachers coping; it halved year-long student suspension rates, and the teachers bolstered respect for the most at-risk students and previously suspended students (Okonofua et al., 2016).

The correlational studies showed a mixed understanding of the relationship between teachers' perspective-taking and teachers' coping. Underwood (2010) found no correlation. Jennings (2015) investigated the relationship between classroom quality factors (CLASS, Pianta et al., 2008) and mindfulness but not with teachers' perspective-taking. The study of Wink et al. (2021) gives the most insight because the study investigated the relationship between teachers' perspective-taking and two independent coping variables. However, the studies did not explore the direction of the correlations.

Underwood (2010) found no statistical relationship between the number of bullying incidents reported by students and teachers' perspective-taking between the two schools. The reason could be caused by differences in school culture between the two schools; school culture can influence the perspectives of teachers and students. Another reason could be the use of an empathy instrument, which was not specially developed for teachers.

Jennings (2015) explored the natural occurrence of independent teacher variables and the correlation between these variables, but not between teachers' perspective-taking and coping. However, the study found a significant correlation between teachers' perspective-taking and teachers' ability to notice thoughts, feelings, and physical sensations (Mindfulness factor Observe: $r = .37$, $p < .05$). In addition, the researcher concluded that when teachers are mindful, they score higher on perspective-taking. However, the study found no correlation between teachers' perspective-taking and personal and teaching efficacy (TES; Hoy & Woolfolk, 1990).

Wink et al. (2021) found that teachers' perspective-taking negatively predicts empathic distress and burnout; perspective-taking outcomes were almost opposite to Empathic Distress. On the other hand, teachers' perspective-taking reported having more positive mindsets about their students with problem behaviors and having a close relationship with the challenging student. Furthermore, teachers' perspective-taking significantly predicts the perceived teacher-student closeness. This observation underscores the observed effect of the three intervention studies. In addition, teachers' perspective-taking positively relates to two measures of handling problem behaviors: perceived competence and problem-solving skills (Wink et al., 2021). Finally, McKnight's (2017) intervention also indicated that direction: teachers overcame

their barriers and increased communication strategies.

The six studies do not address how teachers' perspective-taking impacts their coping. However, the studies revealed positive directions about the impact. The studies motivated further research to overcome implicit bias and partnering barriers, improve the teacher-student relationship, decrease punitive discipline, and increase empathic mindset to create a better classroom climate for pupils with disruptive behavior and teachers.

Wink et al. (2021) conclude that there should be a prompt shift in intervention efforts and behavior management strategies to focus more on teachers' empathy because of their findings. The studies of Okonofua et al. (2016) and McKnight (2017) also point in that direction.

4. Discussion

This scoping review aimed to describe and interpret the available scientific knowledge on perspective-taking by teachers in coping with disruptive classroom behavior and map the measured impact of teachers' perspective-taking on their coping with pupils' disruptive classroom behavior. The first study that could be included is from 2010. While a vast number of publications were screened, only six studies could be included. The question "What kind of perspectives teachers take in coping with pupils' disruptive classroom behavior?" could not be addressed because the researchers already focused on a single perspective-taking; the pupil's viewpoint (five out of six) or that of the pupils' family (one out of six).

The second research question: "How does perspective-taking impact teachers' coping with pupils' disruptive classroom behavior?" could partially be addressed.

The study by McKnight (2017) shows that teachers mainly interpret another person's behavior from their self-perspective. The perspective-taking research confirms that the starting point is the own perspective, and taking the other one's perspective is not done automatically (Apperly, 2018; Cole et al., 2016; Cole & Millett, 2019; Epley et al., 2004; Surtees & Apperly, 2012; Yaniv & Choshen-Hillel, 2012). The studies of McKnight (2017) and Okonofua et al. (2016) confirm that. McKnight (2017) concluded that teachers need coaches and Okonofua et al. (2016) showed that their brief online intervention was necessary to gain an empathic mindset.

However, whether a single perspective taken by teachers overcomes attribution biases can be debated.

Overcoming these biases helps to understand students' behavior and needs and may improve classroom decisions (Gehlbach & Vriesema, 2019; Yaniv & Choshen-Hillel, 2012). The teacher's classroom is not a closed environment; it interacts with the school environment (Welsh & Little, 2018) and pupils' parents. Additionally, education is a complex interacting dynamic system that can not be captured by a mechanic and reductionistic perspective (Biesta, 2020, 2022). In such an interactive environment, multi-perspective-taking could be beneficial for teachers because it may decrease biases, increase accuracy and improve the mutual understanding of all participants (Apperly, 2018; Yaniv & Choshen-Hillel, 2012).

None of the studies investigated how teachers' perspective-taking impacts their coping with pupils' disruptive classroom behavior. Nevertheless, the studies with experimental design give positive indications of the impact, like a decrease in exclusionary practices because of the challenging behavior, an improvement in teacher-pupil/family relationships, a decrease in coping barriers, and an increase in teachers' communications strategies. The effect of teachers' perspective-taking on coping with disruptive student behavior looks promising. The studies of Okonofua et al. (2016) and Wink et al. (2021) give the most explicit indications about the possible impact. However, these studies based teachers' perspective-taking on self-reports; if the teachers actually take the student's perspective is not investigated. Only the study of McKnight (2017) slightly showed teachers' actual thinking and reasoning and confirmed that teachers look at and attribute from their

self-perspective. A coach's help is needed to take the other's perspective. In addition, Wink et al. (2021) gave a direction on how a teacher's perspective-taking may influence coping by the findings that perspective-taking (cognitive empathy) is negatively related to empathic distress and burnout. Teachers with empathic distress or burnout appear to struggle more to understand the students' perspectives and regulate emotional involvement. That stress negatively relates to perspective-taking matches with Jennings's (2015) observation that there is a tendency when teachers are mindful that they score higher on perspective-taking.

The studies of Underwood (2010), Jennings (2015), and Wink et al. (2021) show an above-moderate awareness of students' perspectives by teachers. Nevertheless, empathic distress and burnout can influence teachers' perspective-taking negatively, and a good mood is needed to take the other one's perspective (Samuel et al., 2020; Surtees & Apperly, 2012). Perspective-taking is a relatively slow cognitive process that the automatic self-perspective can overrule in case of cognitive overload (Gehlbach & Vriesema, 2019; Kahneman, 2011). Cognitive overload leads to mental shortcuts and sacrifices the accuracy of the causal attributions (Apperly, 2018; Gehlbach & Vriesema, 2019; Surtees & Apperly, 2012).

Wink's et al. (2021) study shows that perspective-taking teachers have more positive mindsets about their students with problem behaviors and have closer relationships with the challenging student, which are essential for the pupils' academic outcome (Jussim & Eccles, 1992; Rosenthal, 1994; Rubie-Davies, 2006). Conversely, emotionally exhausted teachers maintain a rigid classroom climate that harms pupils, especially those at risk of mental health problems (Jennings & Greenberg, 2009).

Wink et al. (2021) observed that higher levels of empathic distress are related to lower levels of perceived competence in handling problem behavior, using problem-solving skills, and finding effective and collaborative solutions that work for everyone involved. Teachers with higher levels of perspective-taking are more likely to develop closer relationships with the misbehaving pupils (Wink et al., 2021). The direction of the correlation is not investigated, and as Wink et al. (2021) say, it can be bidirectional.

Understanding students' behaviors are vital for pupils' self-esteem, and therefore teachers need to take a student's perspective and take a friendly approach above unyielding, harsh exclusionary methods (Mahvar et al., 2018).

4.1. Limitations

Although this scoping review provides important insights into teachers' perspective-taking in coping with disruptive classroom behavior, it only gives a limited answer to the research questions. The reason is that only a few studies could be included, despite the broad search scope. This result is in itself an important finding but emphasizes that conclusions can only be drawn with caution.

Another limitation is that the studies are relatively difficult to compare because of differences in aim and method. In the included studies, teachers' perspective-taking was not the main focus of all studies. However, this was the reason for performing a scoping review, not a systematic literature review or meta-analysis.

The studies mainly used teachers as informants and teachers' self-report measurements. It is common ground that self-reports can be cognitively biased by social desirability, emotional state, introspective ability, and overestimation.

Finally, the scope of the search was English-language literature. Therefore in the future, it would be interesting to examine research literature in other languages.

4.2. Conclusions

This scoping review determined and mapped the available scientific

knowledge and concludes that perspective-taking by teachers in coping with disruptive classroom behavior is understudied. The interest in this topic is relatively small, despite its possible role in tackling the difficulties teachers experience with disruptive classroom behavior.

The quality of teachers' perspective-taking influences their decision-making, coping, well-being, and educational achievement. In addition, the studies show positive effects on the teacher-pupil relationship and student and teacher's well-being. Finally, the studies indicate that teachers' perspective-taking positively transforms their thinking and actual practice in coping with pupils' disruptive classroom behavior.

Therefore, with the limitations in mind, it can be carefully concluded that coping with a pupil's disruptive classroom behavior depends on teachers' multi-perspective-taking skills.

The studies do not directly reveal teachers' perspective-taking in coping with disruptive behavior in their actual doing. How and if teachers take the perspective of others in their actual doing is still a black box. Investigating this would provide a better understanding of the teachers' actual thinking and doing, which is vital for empowering teachers and improving education (Biesta, 2020, 2022).

The focus of the studies was on single perspective-taking and not on multi-perspective-taking. Therefore, further research should investigate if multi-perspective-taking is beneficial for teachers in coping with disruptive classroom behavior in a complex and dynamic interactive educational learning environment.

Based on the current overview of studies provided in this paper, teachers' perspective-taking appears to be a new and promising direction. However, further research on coping with disruptive classroom behavior is necessary to increase the understanding of the potential beneficial impact of perspective-taking.

Impact and implication statement

This study revealed that teachers' perspective-taking in coping with disruptive classroom behavior is understudied but gave promising directions to solve the problems teachers and pupils face due to the challenging behavior. Perspective-taking may reduce biases and stereotype disruptive classroom behavior. Studies indicate that teachers' perspective-taking positively transforms their thinking and actual practice in coping with pupils' disruptive classroom behavior. Further research is necessary.

Declaration of competing interest

On behalf of all authors, the corresponding author states that there is

Appendix A, Search Strings four databases

Eric versie 2 26-2-2021

- S1 DE "Behavior Modification" OR DE "Contingency Management" OR DE "Behavior Change" OR DE "Behavior Patterns" OR DE "Behavior Problems" OR DE "Social Behavior" OR DE "Antisocial Behavior" OR DE "Child Behavior" OR DE "Positive Behavior Supports" OR TI (((disrupt* OR problem* OR challenging OR deviant OR maladaptive OR difficult OR bad*) N3 (behavior* OR behaviour*) OR misbehavior* OR misbehaviour* OR naught* OR (Positive N1 (Behavior* OR behaviour*) N1 Support*) OR misconduct* OR Rebelliousness) OR AB (((disrupt* OR problem* OR challenging OR deviant OR maladaptive OR difficult) N3 (behavior* OR behaviour*) OR misbehavior* OR misbehaviour* OR naught* OR bad* OR (Positive N1 (Behavior* OR behaviour*) N1 Support*) OR misconduct* OR Rebelliousness) OR SU (((disrupt* OR problem* OR challenging OR deviant OR maladaptive OR difficult) N3 (behavior* OR behaviour*) OR misbehavior* OR misbehaviour* OR naught* OR bad* OR (Positive N1 (Behavior* OR behaviour*) N1 Support*) OR misconduct* OR Rebelliousness)
- S2 DE "Perspective Taking" OR DE "Consciousness Raising" OR DE "Role Perception" OR DE "Empathy" OR DE "Social Cognition" OR DE "Theory of Mind" OR DE "Attribution Theory" OR DE "Role Taking" OR DE "Teacher Attitudes" OR TI (((perspective OR role) N5 (tak* OR chang*)) OR (Teacher* N1 (responsive* OR attitude*)) OR empath* OR egocentri* OR ((perspective OR perception) N1 shift*)) OR AB (((perspective OR role) N5 (tak* OR chang*)) OR (Teacher* N1 (responsive* OR attitude*)) OR empath* OR egocentri* OR ((perspective OR perception) N1 shift*)) OR SU (((perspective OR role) N5 (tak* OR chang*)) OR (Teacher* N1 (responsive* OR attitude*)) OR empath* OR egocentri* OR ((perspective OR perception) N1 shift*))

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no conflict of interest.

This study is part of NRO/NWO-funded research.³ However, the funding source had no involvement in the study design, collection, analysis, interpretation of data, writing this study, and the decision to submit the article for publication.

Credit authorship contribution statement (authors' names are blinded in blinded manuscript)

All authors contributed substantially to the whole process, review & writing, and gave final approval. Therefore, all authors are accountable for all aspects of the work and ensure that accuracy and integrity are part of the process.

Astrid Ottenheim: Conceptualization, Data curation; Formal Analysis; Funding acquisition; Investigation; Methodology; Project administration; Validation; Visualization; Writing – original draft; Writing – review & editing.

Marion van Hattum: Conceptualization, Data curation; Formal analysis; Methodology; Supervision; Validation; Writing – review & editing.

Hanna Swaab: Conceptualization, Data curation; Methodology; Supervision, Validation; Writing – review & editing.

Wouter Staal: Conceptualization, Data curation; Funding acquisition; Methodology; Supervision, Validation; Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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³ NRO/NWO: PO box 93461, 2509 AL Den Haag, Grant number 40.5.19630.067 (<https://www.nro.nl/onderzoeksprogrammas/gedrag-en-passend-onderwijs>)

(continued)

S3 DE "Elementary School Teachers" OR DE "Preschool Teachers" OR DE "Special Education Teachers" OR TI ((elementary OR middle OR primary OR nursery OR preschool* OR kindergarten*) N5 (teacher* OR educator*)) OR AB ((elementary OR middle OR primary OR nursery OR preschool* OR kindergarten*) N5 (teacher* OR educator*)) OR SU ((elementary OR middle OR primary OR nursery OR preschool* OR kindergarten*) N5 (teacher* OR educator*))

S4 S1 AND S2 AND S3

PsycInfo versie 1 26-2-2021

S1 DE "Behavior Modification" OR DE "Classroom Behavior Modification" OR DE "Contingency Management" OR DE "Classroom Behavior" OR DE "Behavior Change" OR DE "Behavior Problems" OR DE "Rebelliousness" OR DE "Social Behavior" OR DE "Aggressive Behavior" OR DE "Antisocial Behavior" OR DE "Child Behavior" OR TI (((disrupt* OR problem* OR challenging OR deviant OR maladaptive OR difficult OR bad*) N3 (behavior* OR behaviour*) OR misbehavior* OR misbehaviour* OR naught* OR (Positive N1 (Behavior* OR behaviour*) N1 Support*) OR misconduct* OR Rebelliousness) OR AB (((disrupt* OR problem* OR challenging OR deviant OR maladaptive OR difficult) N3 (behavior* OR behaviour*) OR misbehavior* OR misbehaviour* OR naught* OR bad* OR (Positive N1 (Behavior* OR behaviour*) N1 Support*) OR misconduct* OR Rebelliousness) OR SU (((disrupt* OR problem* OR challenging OR deviant OR maladaptive OR difficult) N3 (behavior* OR behaviour*) OR misbehavior* OR misbehaviour* OR naught* OR bad* OR (Positive N1 (Behavior* OR behaviour*) N1 Support*) OR misconduct* OR Rebelliousness)

S2 DE "Role Taking" OR DE "Egocentrism" OR DE "Self-Perception" OR DE "Role Perception" OR DE "Empathy" OR DE "Social Cognition" OR DE "Theory of Mind" OR DE "Teacher Attitudes" OR TI (((perspective OR role) N5 (tak* OR chang*)) OR (Teacher* N1 (responsive* OR attitude*)) OR empath* OR egocentri* OR ((perspective OR perception) N1 shift*)) OR AB (((perspective OR role) N5 (tak* OR chang*)) OR (Teacher* N1 (responsive* OR attitude*)) OR empath* OR egocentri* OR ((perspective OR perception) N1 shift*)) OR SU (((perspective OR role) N5 (tak* OR chang*)) OR (Teacher* N1 (responsive* OR attitude*)) OR empath* OR egocentri* OR ((perspective OR perception) N1 shift*))

S3 DE "Preschool Teachers" OR DE "Middle School Teachers" OR DE "Elementary School Teachers" OR DE "Special Education Teachers" OR TI ((elementary OR middle OR primary OR nursery OR preschool* OR kindergarten*) N5 (teacher* OR educator*)) OR AB ((elementary OR middle OR primary OR nursery OR preschool* OR kindergarten*) N5 (teacher* OR educator*)) OR SU ((elementary OR middle OR primary OR nursery OR preschool* OR kindergarten*) N5 (teacher* OR educator*))

S4 S1 AND S2 AND S3

WOS versie 1 10-3-2021

#1 TS=((disrupt* OR problem* OR challenging OR deviant OR maladaptive OR difficult OR bad*) NEAR/3 (behavior* OR behaviour*) OR misbehavior* OR misbehaviour* OR naught* OR (Positive NEAR/1 (Behavior* OR behaviour*) NEAR/1 Support*) OR misconduct* OR Rebelliousness)

#2 TS=((perspective OR role) NEAR/5 (tak* OR chang*)) OR (Teacher* NEAR/1 (responsive* OR attitude*)) OR empath* OR egocentri* OR ((perspective OR perception) N1 shift*))

#3 TS=((elementary OR middle OR primary OR nursery OR preschool* OR kindergarten*) NEAR/5 (teacher* OR educator*))

#4 #1 AND #2 AND #3

SA versie 1 10-3-2021

#1 MAINSUBJECT.EXACT("Behavior Modification") OR MAINSUBJECT.EXACT("Behavior Problems") OR MAINSUBJECT.EXACT("Social Problems") OR AB, TI, SU(((disrupt* OR problem* OR challenging OR deviant OR maladaptive OR difficult OR bad*) NEAR/3 (behavior* OR behaviour*) OR misbehavior* OR misbehaviour* OR naught* OR (Positive NEAR/1 (Behavior* OR behaviour*) NEAR/1 Support*) OR misconduct* OR Rebelliousness)

#2 MAINSUBJECT.EXACT("Interpersonal Communication") OR MAINSUBJECT.EXACT("Verstehen") OR MAINSUBJECT.EXACT("Empathy") OR MAINSUBJECT.EXACT("Teacher Attitudes") OR MAINSUBJECT.EXACT("Student Teacher Relationship") OR AB, TI, SU(((perspective OR role) NEAR/5 (tak* OR chang*)) OR (Teacher* NEAR/1 (responsive* OR attitude*)) OR empath* OR egocentri* OR ((perspective OR perception) N1 shift*))

#3 AB, TI, SU((elementary OR middle OR primary OR nursery OR preschool* OR kindergarten*) NEAR/5 (teacher* OR educator*))

#4 #1 AND #2 AND #3

Table B
General descriptors of 6 included studies

authors	Year and type of publication	country	Period of data collection	population	aim	design	author's conclusions	Interpretations quality
Hoogendijk, et al.	2019 article in peer-reviewed journal	The Netherlands: In a circle of 1-h drive from Rotterdam	School year 2013–2014 and 2014–2015	Teachers: 103 classroom teachers (N= 51 intervention group) Pupils: 103 dyad students aged 6 to 9 with externalizing problem behavior	Effect study of teacher-focused coaching intervention Key2Teach on aspects of the teacher-pupil relationship of pupils with externalizing problem behavior	Randomized Controlled Trial with intent-to-treat design	Key2Teach improves the closeness in the relationship between teachers and students with externalizing problem behavior and decreases the teacher-reported externalizing problem behavior	9 + out of 9 Measurements: 5/Q + SI + O/4 IPEInformant: R + S Design: Q1 + Qn Research method level: 2
Jennings	2015 article in peer-reviewed journal and published online in 2014	The United States of America (California)	October through December 2013	Teachers: 35 classroom teachers Pupils: 35 dyad-students age 3 to 5 with challenging behavior according to the teacher	Examination of the naturally occurring variation of teachers' well-being, mindfulness, and self-compassion in relation to dimensions of classroom quality and teachers' attitudes about a challenging student	Explorative mixed-method baseline study to study relations between independent variables.	Teachers' social and emotional characteristics may play a critical role in classroom quality and supportive relationships with challenging students	8 + out of 9 Comparator group: -Measurements: 8/Q + SI + O/7 IPE Informant: R + S Design: Q1 + Qn Research method level: 5
McKnight	2017 Dissertation for doctor degree	The United States of America (Virginia)	2015–2016	Teachers: 8 classroom teachers Pupils and their	Explore teachers' experiences partnering with families of their	Embedded mixed-method collective case study	Tree keys to success for Home-School partnership: 1. The coaches: encourage	8 + out of 9 Comparator group: -Measurements: 11/Q-SI/4 IPE

(continued on next page)

Table B (continued)

authors	Year and type of publication	country	Period of data collection	population	aim	design	author's conclusions	Interpretations quality
				<i>families: 14 dyad- students with externalizing problem behavior, age 5 to 8</i>	students who are at-risk for emotional or behavioral disorders.		and promote partnership. 2. Incorporation of CARES framework to encourage communication, empathy, cultural awareness, and trust. 3. A process to encourage teachers to view parents form a partnership approach. The study illustrated that the nature of these partnerships is complicated, understudied, and congruent roles and expectations are important in partnering for families and teachers	Informant: S Design: Q1 + Qn Research method level: 6
Okonofua et al.	2016Peer-reviewed journal	The United States of America (California)	2014–2015	<i>Teachers: Experiment 1: 39 Experiment 2: 0 Experiment 3: 31 math teachers Pupils: Experiment 1: 0 Experiment 2: 302 age 18 > Experiment 3: 1682 age 11 - 14</i>	Change teachers' mindset from punitive to empathic that values students' perspective and positive relationships while encouraging better behavior, and testing the effect of empathic response to misbehavior and on student suspension rates?	Experimental mixed-method design with a longitudinal randomized placebo-controlled field experiment	Teachers' mindsets about discipline misbehavior directly affect the quality of teacher-student relationships and student suspensions. Teachers' mindset can be changed through scalable intervention.	7 + out of 9 Theoretical Framework: -Limitations – Measurements: Informant: S Design: QL; + Qn Research method level: 2 and 4
Underwood	2010 dissertation for doctor degree	The United States of America (Tennessee)	Fall semester 2009	<i>Teachers: 41 classroom teachers Pupils: 973 Age 11 to 14</i>	Identifying statistically significant differences comparing the bullying incidents between two middle schools and the impact of teacher empathy on bullying in schools.	Quantitative cross-sectional study with descriptive research design	The researcher saw no correlation between the level of teacher empathy the decreasing number of bullying incidents in schools.	8 + out of 9 Acknowledgments: -Measurements: 2/Q/ 2 IPE Informant: S Design: Qn Research method level: 7
Wink et al.	2021 Peer-reviewed journal	The United States of America (Connecticut)	Before June 2020	<i>Teachers: 178 Classroom teachers Pupils: 178 challenging behavior self-identified by teacher Age 10 - 11</i>	Examination reliability and validity of the adapted measure and to test the associations between teacher empathy and their beliefs and practices regarding challenging student behavior.	Survey study for validation and correlation study	Results indicated the adapted measure reliably assessed teachers' cognitive & affective empathy and empathic distress. Found associations: 1. Teachers higher in cognitive empathy reported: more positive mindsets about student behavior, greater competence in handling problem behaviors, increased use of effective problem-solving strategies, greater relationship closeness, and lower levels of job burnout. 2. Teachers high in	8 + out of 9 Comparator group – Measurements: 9/Q/ 8 IPE Informant: S Design: Qn Research method level: 7

(continued on next page)

Table B (continued)

authors	Year and type of publication	country	Period of data collection	population	aim	design	author's conclusions	Interpretations quality
							empathic distress showed largely opposite findings: more negative misbehavior mindsets, greater relationship conflict, less competence, less problem-solving strategies, higher job burnout.	

Note - quality interpretations: Theoretical Framework/Comparator group/Population description/Explanation process/Definition key variables -concepts/Descriptive statistics explained/Description analytic techniques/Limitations discussed/Acknowledgments (scored with + or -) * Measurements: amount Instruments/type: Questionnaire-Semistructured-Interview - Observation/amount of instruments with psychometric evidence(X IPE) * Informants: Researcher – Self * Study type: Quantitative – Qualitative *Research method level: 1. Meta-analysis – Systematic review (filtered information) 2. Randomized Controlled Trails 3. Quasi-experimental trail 4. Cohort studies Longitudinal 5. Cohort studies 6. Case-control Studies 7. Cross-sectional surveys 8. Case Reports/Case Series (2–8 is unfiltered information) (level of research inspired by <https://guides.himmelfarb.gwu.edu/ebm/studytupes>)

Appendix C

Table C

Description - teachers' perspective-taking is:

an awareness of the learner's internal condition and putting oneself in the pupil's shoes (<i>Not in the article but Key2teach-Special coaching Manual, Van Veen et al., 2015</i>)	an awareness of the child's perspective. (Jennings, 2015)	taking an alternative point of view - walking a mile in someone's shoes. Perspective-taking differs from empathy because it is associated with a cognitive skill, and empathy involves an emotional capacity. (McKnight, 2017)	a cognitive component of empathy may help teachers understand students' experiences and internal states, responding more appropriately to misbehavior or with more significant concern for their needs. (Okonofua et al., 2016)	a tendency and ability to adapt to the psychological viewpoint of others spontaneously. (Underwood, 2010)	the ability to take another's perspective to understand that others have their own emotional experiences: cognitive empathy. (Wink et al., 2021)
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