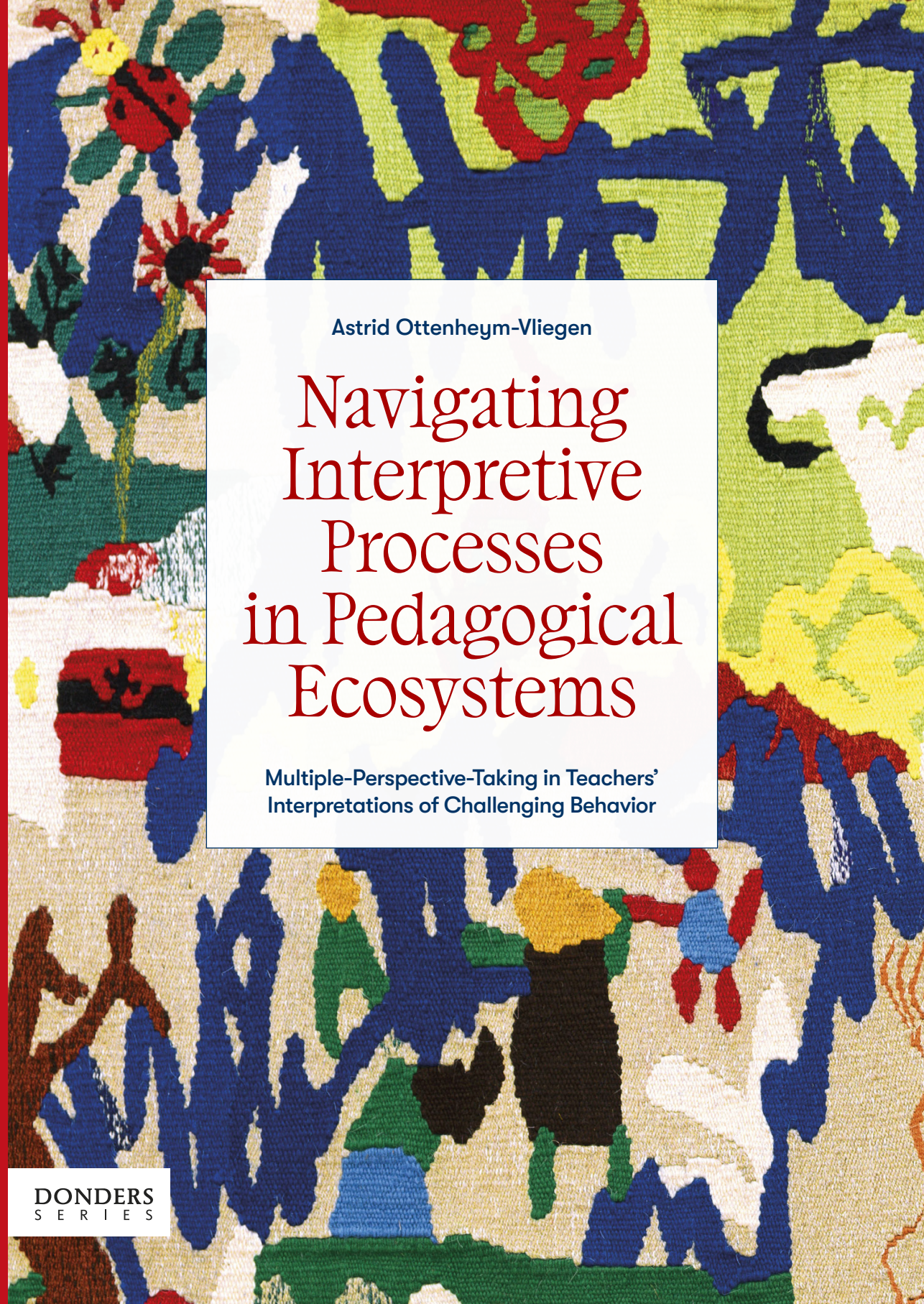




Astrid Ottenheim-Vliegen

Navigating Interpretive Processes in Pedagogical Ecosystems

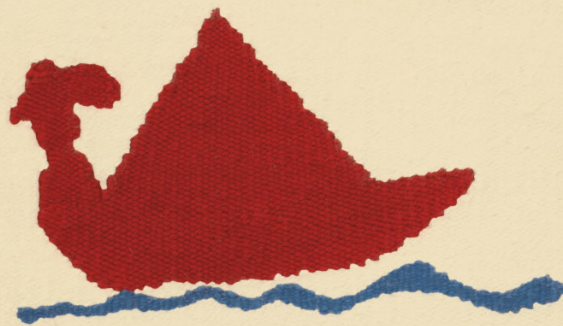
Multiple-Perspective-Taking in Teachers'
Interpretations of Challenging Behavior

DONDERS
SERIES

Astrid Ottenheym-Vliegen

Navigating Interpretive Processes in Pedagogical Ecosystems

Multiple-Perspective-Taking in Teachers'
Interpretations of Challenging Behavior



DONDERS
S E R I E S

For India,

*and for all those who remind us
to stay, to see, and to keep thinking*

¹ 'See also: Door de ogen van India (Netwerk Met Andere Ogen)
'<https://www.youtube.com/watch?v=-vaHUgoZiOM&t=3s>

Colophon

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**Curiosity before certainty.
Inquiry before conviction.**

Navigating Interpretive Processes in Pedagogical Ecosystems

**Multiple-Perspective-Taking in Teachers'
Interpretations of Challenging Behavior**

Proefschrift ter verkrijging van de graad van doctor
aan de Radboud Universiteit Nijmegen
op gezag van de rector magnificus prof. dr. J.M. Sanders,
volgens besluit van het college voor promoties
in het openbaar te verdedigen op

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door

Astrid Maria Hubertina Vliegen

geboren op 11 november 1961
te Voerendaal

Promotoren:

Prof. dr. W.G. Staal

Prof. dr. J.T. Swaab (Universiteit Leiden)

Copromotor:

Dr. M.J.C. van Hattum (HAN)

Manuscriptcommissie:

Prof. dr. R.H.J. Scholte

Dr. P.K.H. Deschamps

Prof. dr. P.N. Kenis (Tilburg University)

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Interpretations of Challenging Behavior**

Dissertation to obtain the degree of doctor
from Radboud University Nijmegen
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according to the decision of the Doctorate Board
to be defended in public on

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by

Astrid Maria Hubertina Vliegen

born on November 11, 1961
in Voerendaal, the Netherlands

Supervisors:

Prof. dr. W.G. Staal

Prof. dr. J.T. Swaab (Universiteit Leiden)

Co-supervisor:

Dr. M.J.C. van Hattum (HAN)

Manuscript Committee:

Prof. dr. R.H.J. Scholte

Associate prof. dr. P.K.H. Deschamps

Prof. dr. P.N. Kenis (Tilburg University)

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Chapter 1

General Introduction

A pedagogical situation:

Before the lesson begins, the teacher is already thinking about the class ahead. One student in particular comes to mind. The previous lesson had ended with some tension.

The memory lingers while the teacher prepares the room.

Students enter and take their seats. The student who had been on the teacher's mind enters quickly, drops a bag beside the chair, and turns away from the table before taking a seat. The teacher notices the movement immediately. For a brief moment, a familiar tightening returns.

The lesson begins. While giving the first instruction, the teacher keeps an eye on the student. When the student shifts in the chair and looks elsewhere, the teacher pauses for a second before continuing. The lesson continues, yet a quiet anticipation of how this student might respond today is already present.

Across educational contexts worldwide, teachers regularly encounter situations in which student behavior disrupts the flow of teaching and learning (OECD, 2019). Such situations can affect students' opportunities to participate and learn. They may also confront teachers with complex pedagogical judgments regarding how to respond, which can influence teachers' sense of professional efficacy.

Moments such as the one described above illustrate that classroom behavior rarely presents itself as a neutral or isolated event. Teachers enter learning environments with prior experiences, expectations, and emotional responses that shape how they notice and interpret students' actions. Within seconds, these interpretive processes begin to shape how behavior is understood and how teachers decide to respond. Disruptive classroom behavior is consistently reported as a significant challenge in educational practice (OECD, 2019). It is associated with reduced instructional time and lower student engagement, while also contributing to teacher stress and attrition (Aloe et al., 2014; Madigan & Kim, 2021). These challenges may reinforce educational inequities when disciplinary decisions are shaped by interpretive judgments that do not affect all students equally. Research has shown that exclusionary disciplinary practices disproportionately affect students, even when exhibiting similar behavior, suggesting that the interpretation of behavior is not fully neutral but shaped by contextual and institutional factors (Skiba et al., 2014; Welsh & Little, 2018).

Research further suggests that teachers often interpret disruptive behavior primarily in terms of student characteristics or dispositions. When behavior is understood predominantly through such student-focused attributions, teachers' interpretive frameworks can become constrained, increasing the likelihood of exclusionary responses (Batstra & Frances, 2012; Skiba et al., 2014). Addressing disruptive classroom behavior is therefore not merely a matter of applying behavioral management techniques. It raises deeper questions about how teachers perceive, interpret, and respond to behavior in the complex realities of learning environments.

Approaches to disruptive classroom behavior have predominantly focused on behavioral management and intervention strategies (Aloe et al., 2014; Hofstetter & Bijstra, 2014; Mullis et al., 2019; Van Grinsven & van der Woud, 2016), paying less explicit attention to the interpretive and interactive processes through which teachers make sense of behavior and decide how to respond (Spilt et al., 2011; Weiner, 2010). While such approaches can offer practical strategies, they do not always provide teachers with sufficient conceptual resources to understand the diverse and often ambiguous causes of disruptive behavior in educational practice. In research on professional learning, there is therefore increasing attention to how

teachers' interpretive frameworks can be enriched and connected to more contextual and relational understandings of student behavior (Fives & Buehl, 2012; Okonofua et al., 2016a; Ottenheim-Vliegen et al., 2023b; Wang & Hall, 2018; Wang et al., 2024). Expanding the range of explanations teachers consider may enlarge the repertoire of responses they perceive as possible, thereby strengthening their sense of professional agency and enabling more context-sensitive pedagogical decisions (Gehlbach & Vriesema, 2019; Wink et al., 2021).

Yet it remains insufficiently understood how professional learning can deliberately engage these interpretive processes in ways that help teachers develop a divergent range of explanations for disruptive behavior within complex learning environments.

Addressing this gap is key to understanding how teachers' interpretations, emotions, and sense of agency interact in practice, and how these dynamics may support more inclusive and sustainable responses to disruptive classroom behavior.

Teachers' self-efficacy, their belief in their ability to influence student behavior (Bandura, 1993) is often lowest when addressing disruptive behavior (Brouwers & Tomic, 2000; Lanza, 2020; OECD, 2019; Zee & Koomen, 2016). This limited self-efficacy affects not only classroom management but also teachers' well-being and the quality of their relationships (Kokkinos et al., 2005; Spilt et al., 2011) as well as students' opportunities to learn. When teachers feel ineffective, stress and negative emotions rise, shaping perceptions of students and constraining interpretive space from exploratory, divergent sense-making toward more convergent and reactive interpretations (Fives & Buehl, 2012; Wang et al., 2024).

Over time, this dynamic can lead to a negative feedback loop: teachers' emotional exhaustion affects the quality of teacher-student relationships (Jennings & Greenberg, 2009; Jeon et al., 2016; Whitaker et al., 2015). Such recursive cycles extend beyond individual students, coloring the educational climate and undermining the embrace of variability (Jennings & Greenberg, 2009). Breaking this cycle requires more than behavioral techniques; it calls for a deeper understanding of how teachers perceive, interpret, and act upon behavior within the multiple-layered educational ecology (Biesta, 2020; Bronfenbrenner & Morris, 2007).

Disruptive classroom behavior cannot be defined in purely objective terms. What constitutes "disruptive" behavior varies within cultural and institutional contexts, reflecting norms, values, and expectations that differ across schools and societies

(Graham & Slee, 2008; Koskela & Lanas, 2016; Riojas-Cortez et al., 2013; Van der Ploeg, 2011). Consequently, interpretations of behavior are inherently relational and teacher-dependent, shaped by professional beliefs and the social environment in which they operate (Biesta et al., 2015; Fives & Buehl, 2012). Teachers' beliefs, in turn, shape how teachers approach their work and perceive their agency (Biesta et al., 2015; Fives & Buehl, 2012).

Despite this recognition, it remains insufficiently specified how teachers' beliefs and attributional patterns shape their interpretations and actions in everyday educational practice. Teachers' beliefs are rooted in personal experience and shaped by cultural and professional norms, informing how behavior is perceived and explained, influencing whether challenges are attributed to student factors or understood as part of interactional dynamics within learning environments (Biesta et al., 2015; Fives & Buehl, 2012; Weiner, 2010).

Interpretations are not neutral: they affect teachers' perceived locus of control and, in turn, their sense of agency (the felt capacity to act meaningfully within the pedagogical ecology) (Bandura, 2020; Turetsky et al., 2021).

Understanding how this interpretive process unfolds and if it can be enriched and supported is essential for strengthening inclusive, sustainable, and resilient educational practices. Such processes become particularly visible in situations that teachers experience as genuinely challenging, where interpretive demands intensify and dynamics of stress, self-efficacy, and attribution become more pronounced.

In this sense, shifts in interpretation are not merely cognitive adjustments, but open up different possibilities for pedagogical action within complex educational situations.

The central question throughout this dissertation is therefore: *Can teachers' interpretive decision-making processes regarding challenging classroom behavior shift through multiple-perspective-taking within pedagogical-ecological learning environments?*

Teachers' Interpretive Frameworks and Decision-making Processes

Teachers' decision-making processes lie at the heart of pedagogical interactions, shaping everyday teacher-student exchanges and the extent to which educational situations become inclusive learning environments. Behavior does not speak for

itself; it is perceived, interpreted, and acted upon through interpretive frameworks shaped by beliefs, expectations, and professional scripts that define what is seen as problematic and what is considered possible (Fives & Buehl, 2012; Koskela & Lanas, 2016; Weiner, 2010). Rooted in the cognitive information processing tradition, decision-making is conceptualized as a cycle of (selective) perception, working memory, attribution, and response-choice (Atkinson & Shiffrin, 1968; Baddeley & Hitch, 1974; Miller-Cotto & Gordon, 2024). While this model illuminates key aspects of cognitive processing, it remains partial when applied to educational practice, where cognitive, emotional, and relational processes unfold simultaneously within a broader pedagogical ecology.

Teachers' decision-making processes unfold within a biopsychosocial-ecological system. Within this system, cognitive, emotional, relational, and contextual processes are dynamically intertwined (Bronfenbrenner & Morris, 2007; Frenzel et al., 2018; Sameroff, 2009). Learning environments function as developmental components of the pedagogical ecosystem and are shaped by ongoing pedagogical interactions among students, teachers, peers, and the broader ecosystem context. These interactions cannot be reduced to individual cognitive decisions; rather, they emerge from recursive interplay among cognitive, emotional, relational, and contextual processes. Together, these processes constitute interactional dynamics that are continuously enacted through teachers' interpretations in ongoing interaction with students. Within this ecology, teachers' interpretive processes are inherently embodied and shaped by values and prior experiences. Perception and action are intertwined in such a way that teachers do not merely observe pedagogical situations but actively enact their meaning through ongoing interaction (Varela et al., 2017). These interpretations are filtered through prior experiences, professional scripts, and cultural norms (Rubie-Davies, 2009; Wang & Hall, 2018; Turetsky et al., 2021).

They are further modulated by emotions that influence what teachers notice, how behavior is interpreted and attributed, and which responses are considered appropriate in pedagogical interaction (Sutton & Wheatley, 2003; Frenzel et al., 2018).

Teachers' interpretations and biases carry particular weight because students are directly affected by their decisions and approaches, which shape learning interactions, educational climate, opportunities for participation, and educational pathways (Booth & Ainscow, 2002; Gehlbach & Vriesema, 2019; Rubie-Davies, 2009). Within this process, self-efficacy plays a major role (Bandura, 1997; Hattie, 2023; Tschannen-Moran & Woolfolk Hoy, 2001). Low efficacy in dealing with disruptive

behavior narrows interpretive space and increases the likelihood of student-focused attributions (OECD, 2019; Zee & Koomen, 2016). Stress and arousal further constrain perception, reinforcing reactive tendencies and narrowing interpretive space (Arnsten, 2009; Bechara & Damasio, 2005; Frenzel et al., 2015; Wink et al., 2021). In such moments, emotions do not merely accompany cognition; they guide attention and bias interpretation, in ways that make student-focused attributions more likely (Bechara & Damasio, 2005; Frenzel et al., 2018). Systematic attribution patterns emerge, often locating problems in student characteristics rather than acknowledging that they may result from interactional dynamics (Koskela & Lanas, 2016; Wang & Hall, 2018; Ysseldyke et al., 1983), with exclusionary consequences (Skiba et al., 2014). Within teachers' decision-making processes, attribution constitutes a critical interpretive hinge between perception and action: how disruptive behavior is explained shapes teachers' emotional responses, sense of efficacy, and the range of pedagogical actions considered possible (Weiner, 2010). Whether behavior is primarily attributed to stable student characteristics or understood in interactional and contextual terms shapes whether interpretive space narrows or remains open within the pedagogical ecology (Koskela & Lanas, 2016; Wang & Hall, 2018).

Understanding teachers' decision-making processes requires more than cognitive information-processing models. It also requires situating these processes in lived pedagogical practice, where beliefs, efficacy, embodied states, and ecological conditions intersect in the ongoing interactions of classrooms and schools (Biesta & Tedder, 2007; Bronfenbrenner & Morris, 2007). This raises the question of whether teachers' interpretive processes can be enriched to open up more inclusive and context-sensitive understandings of disruptive classroom behavior and the pedagogical responses it invites.

Teaching in contexts of behavioral diversity confronts professionals with forms of complexity that cannot be understood through single-cause explanations. Classroom behavior arises from the dynamic interaction of biological, psychological, social, and contextual processes within a pedagogical ecosystem. Responding responsibly to such complexity, therefore, requires more than adding explanations or applying predefined strategies. It requires a professional orientation toward interpretation and explanation that can hold both divergence and coherence simultaneously. Divergent reasoning without a mereological orientation—an awareness of how parts and wholes relate within complex systems—risks fragmentation, as multiple explanations remain disconnected from the relational dynamics of the situation. Mereological reasoning without divergence, by contrast, risks closure;

complex interactions are explained within a fixed system logic that forecloses alternative interpretations and ethical responsiveness. Professional judgment in education must therefore operate within the tension between these tendencies, remaining open to multiple interpretations while attending to how parts and wholes shape one another in pedagogical situations. Practices that enable professionals to consider situations from multiple perspectives may help sustain this balance between divergence and coherence.

Multiple-Perspective-Taking as a Generative Competence

Multiple-perspective-taking is conceptualized as the professional competence to engage with the tensions inherent in complex pedagogical situations from multiple interpretive standpoints. It is not understood as the accumulation of viewpoints, nor as a cognitive exercise detached from practice, but as an embodied, relational, and inquiry-oriented stance toward meaning-making in such situations. Through multiple-perspective-taking, teachers learn to generate and test divergent hypotheses about behavior, while situating these interpretations within the broader ecological context of relationships, histories, institutional conditions, and their own interpretive standpoint.

When cultivated as a professional norm, multiple-perspective-taking supports a way of seeing in which behavior is approached neither as an isolated student attribute nor as a closed systemic outcome, but as a dynamic, interactionally co-constructed phenomenon. This orientation foregrounds responsibility rather than certainty, inquiry rather than control, and responsiveness rather than premature closure. It aligns with a biopsychosocial-ecological understanding of human development and provides a normative foundation for inclusive, context-sensitive pedagogical judgment and action.

Building on this view, multiple-perspective-taking is conceptualized as an epistemic, relational, and embodied process through which teachers learn to inhabit, rather than merely imagine, alternative standpoints (Gallagher, 2005; Varela et al., 2017). It entails cognitive flexibility, affective regulation, and ethical responsiveness that allow teachers to reorient perception and judgment within ambiguity (Biesta, 2013; Fonagy et al., 2018). In this sense, multiple-perspective-taking can operate as a generative mechanism of agency: by connecting observation with interpretation and emotion with action, it transforms how teachers enact professional judgment

in complex contexts (Biesta & Tedder, 2007; Emirbayer & Mische, 1998). Such alertness to potential biases and openness to alternative interpretations mark a developmental shift from reactive interpretation toward more inclusive and context-sensitive forms of professional agency (Sivakumar & Boon, 2024).

Multiple-perspective-taking makes reflective inquiry an enacted dimension of professional judgment by enabling teachers to hold divergent hypotheses in relation to the broader pedagogical ecology. In doing so, it makes reflective reorientation both possible and professionally meaningful, reducing the likelihood of reactive closure under conditions of stress and constraint in everyday classroom decision-making (Arnsten, 2009; Weiner, 2010; Wink et al., 2021).

Teachers' interpretive frameworks act as lenses through which classroom life becomes meaningful. The meaning of classroom behavior arises not from the act itself but from how it is seen (Fives & Buehl, 2012; Koskela & Lanas, 2016). Yet student behavior is shaped by many interwoven factors, including peer relations, family dynamics, school culture, and broader contexts, which make single-perspective explanations insufficient (Bronfenbrenner & Morris, 2007; Sameroff, 2009; Zhao & Zhao, 2022). Teachers' interpretations, while indispensable, are often filtered through their own interpretive standpoint, which tends to be quick, automatic, and susceptible to bias (Epley et al., 2004; Gehlbach & Vriesema, 2019; Kahneman, 2011). To gain a more complete and balanced understanding of student behavior, it is valuable to take into account the perspectives of students, parents, social networks, and colleagues, while also attending to the cognitive, emotional, and experiential mechanisms that shape how these perspectives are interpreted and integrated into teachers' judgments (Gehlbach, Brinkworth, & Wang, 2012; Hyun & Marshall, 1997).

Within this dissertation, this deliberate effort is conceptualized not as a discrete cognitive skill, but as an epistemic, embodied, and relational practice of inquiry. Multiple-perspective-taking refers to the ongoing effort to enrich one's interpretive frame by considering how a situation may appear from multiple standpoints and how these views can inform professional judgment and decision-making. While perspective-taking generally involves understanding a situation from another person's or group's point of view – imagining their thoughts, intentions, or feelings within a given context (Epley et al., 2004; Fonagy et al., 2018; Gehlbach & Vriesema, 2019) – research shows that it can reduce bias, improve judgment, and strengthen relationships in ways that support more inclusive, responsive, and context-sensitive learning environments (Fonagy et al. 2018; Galinsky et al., 2008; Gehlbach & Vriesema, 2019; Lobchuk, 2006). In educational contexts, cultivating multiple-

perspective-taking may help teachers move from student-focused attributions towards more interactional, contextual accounts, thereby enlarging their sense of agency and scope for action. While perspective-taking has been shown to be developable, its accurate enactment appears to depend on factors such as motivation, prior experience, and situational context (Gehlbach & Brinkworth, 2012; Okonofua et al., 2016a). This is particularly important in situations where teachers have not personally encountered the challenges their students face.

The studies in this dissertation aim to examine how teachers' interpretive decision-making regarding disruptive classroom behavior can be understood empirically and conceptually, how these processes are shaped by beliefs, emotions, and attributions, and how professional learning oriented toward multiple-perspective-taking may enrich these interpretive processes in teaching practice.

To address the central question, the dissertation follows a multi-study research trajectory that moves from conceptual exploration to empirical description and the design and examination of professional learning in practice.

The Epistemic Trajectory and Research Line

This dissertation originated within a broader research initiative funded by the Netherlands Initiative for Education Research (NRO), conducted in collaboration with two regional partnerships for inclusive education in the Netherlands. These partnerships observed that, despite years of intensified behavioral support, student behavior remained the most frequent reason for additional provision, referral, and even school dropout. Teachers reported that existing behavioral training and expert advice were insufficient to understand or effectively support students who displayed disruptive behavior. This practical concern revealed a deeper issue: while support systems focused on strategies for managing behavior, little attention was given to the interpretive processes through which teachers make sense of that behavior.

Building on this empirical and pedagogical challenge, and on prior research showing that teachers' beliefs, attributions, and sense of efficacy are closely related to how they respond to student behavior, the studies reported in this dissertation address what is still insufficiently understood: how teachers' ways of knowing and interpreting disruptive behavior within pedagogical-ecological contexts can be deliberately supported and enriched.

Together, these studies examine teachers' interpretive decision-making regarding disruptive classroom behavior across conceptual, empirical, and practice-based inquiries, exploring how professional learning oriented toward multiple-perspective-taking may enrich these interpretive processes. In this way, the dissertation traces an epistemic trajectory from conceptual exploration to enacted transformation, examining how teachers' ways of knowing, interpreting, and acting can be enriched through perspective-rich inquiry within complex pedagogical ecologies.

To capture the layered nature of these interpretive processes, an explorative, mixed-method, and design-based approach was adopted. This orientation was chosen for three reasons. First, systematic research into how teachers take and integrate multiple perspectives in understanding student behavior was scarce. Second, teachers' interpretive decision-making unfolds within complex biopsychosocial and pedagogical-ecological systems, which cannot be meaningfully reduced to oversimplified experiments. Third, the research was developed in close collaboration with schools and regional support networks, requiring a methodology that could generate knowledge with practitioners rather than about them. This methodological orientation reflects the study's aim to understand and support interpretive processes in situ rather than to test predefined interventions.

Across the studies presented in this dissertation, an explicitly explorative orientation was adopted that mirrors the nature of the professional practice under study. Just as teachers are required to interpret behavior within complex, dynamic pedagogical ecologies, the research itself was designed to remain open to emergence, iteration, and contextual sensitivity. By tracing teachers' interpretive processes across conceptual, empirical, and design-based inquiries, the research enacts a perspective-rich stance toward inquiry that aligns methodological choices with the very forms of professional judgment and learning it seeks to understand and support.

Aligned with this epistemic positioning, the research trajectory unfolded through a sequence of deliberate choices and tensions, moving from conceptual exploration and empirical grounding to enacted professional practice and reflective evaluation. One central dilemma concerned whether to prioritize description or intervention. Rather than immediately designing solutions, the studies first sought to understand how teachers interpret and attribute disruptive behavior in everyday practice, recognizing such understanding as a necessary condition for meaningful professional learning. A second tension concerns capturing the ecological complexity of teachers' decision-making processes without reducing it to oversimplified variables. This informed the choice for methodological pluralism, iteration, and design-based

inquiry. Finally, the research navigated the distinction between conducting research about teachers and engaging in inquiries with teachers. By positioning teachers as epistemic agents whose interpretations constitute both the object and the locus of professional learning, the research aligned its methodological choices with the professional practices it sought to understand and support.

1. *Mapping the field* – A scoping review explored how teachers' perspective-taking has been studied in relation to disruptive classroom behavior, identifying conceptual foundations and gaps in existing research.
2. *Understanding current practice* – A cross-sectional study explored how teachers describe and interpret student behavior in their written reports, including their attributional reasoning, and the extent to which multiple perspectives are incorporated.
3. *Designing a learning program* – Building on these insights, a design-based study developed the CLIMB© (Dutch: WegWijsinGedrag©) learning program to cultivate multiple-perspective-taking as an epistemic and embodied competence, drawing on pedagogical and ecological theory.
4. *Examining interpretive shifts in practice* – A subsequent practice-based evaluation explored how teachers' interpretations of disruptive classroom behavior may shift within a professional learning context designed to cultivate multiple-perspective-taking, focusing on changes in behavioral appraisals, perceived relationships, and self-efficacy.

Together, the four studies form an iterative research trajectory examining how teachers interpret disruptive classroom behavior and how professional learning practices may support the development of multiple-perspective-taking within these interpretive processes.

Taken together, the studies contribute to a more nuanced understanding of how teachers' interpretive agency can be cultivated within complex pedagogical ecologies. By positioning multiple-perspective-taking as an epistemic and embodied competence, the research examines how this practice may inform teachers' interpretive agency within these ecologies.

The subsequent chapters address this question by examining how teachers understand and respond to disruptive behavior, and by exploring how multiple-perspective-taking can be developed, observed, and studied across conceptual, empirical, and practice-based approaches.



Chapter 2

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.

Keywords: *perspective-taking, teachers, coping, disruptive behavior, scoping review*

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; Reyes, 2006; Richards, 2012; 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 perspective-taking that influences decision-making (Gehlbach & Vriesema, 2019).

Teachers

In general, teachers' self-efficacy (e.g., trust in one's capabilities; Bandura, 1993) to improve disruptive classroom behavior is limited (Brouwers & Tomic, 1999, 2000; 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 (Burssens et al., 2019).

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 & 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 (Van der 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).

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 (Ministry of Education, 2020; LiCalsi et al., 2021; Welsh & Little, 2018). Moreover, disciplinary measures do not reduce undesirable behavior or improve positive student changes. (Ministry of Education, 2020; LiCalsi et al., 2021).

Pupils' problematic behaviors are often due to context factors and social interactions instead of child-related factors (Burssens 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; Te Meerman et al., 2017; Vettenburg & Walgrave, 2017).

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; Burssens 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 (Te 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 Pygmalion-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).

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 et al., 2007; Lobchuk, 2006; 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 & Millett, 2019; Cole et al., 2016; 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.

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).

Protocol and Registration

The research team and information specialist developed a protocol in advance and published it online (Ottenheim-Vliegen 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.

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.

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.

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. 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.

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.

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.

Identification of studies via databases and registers

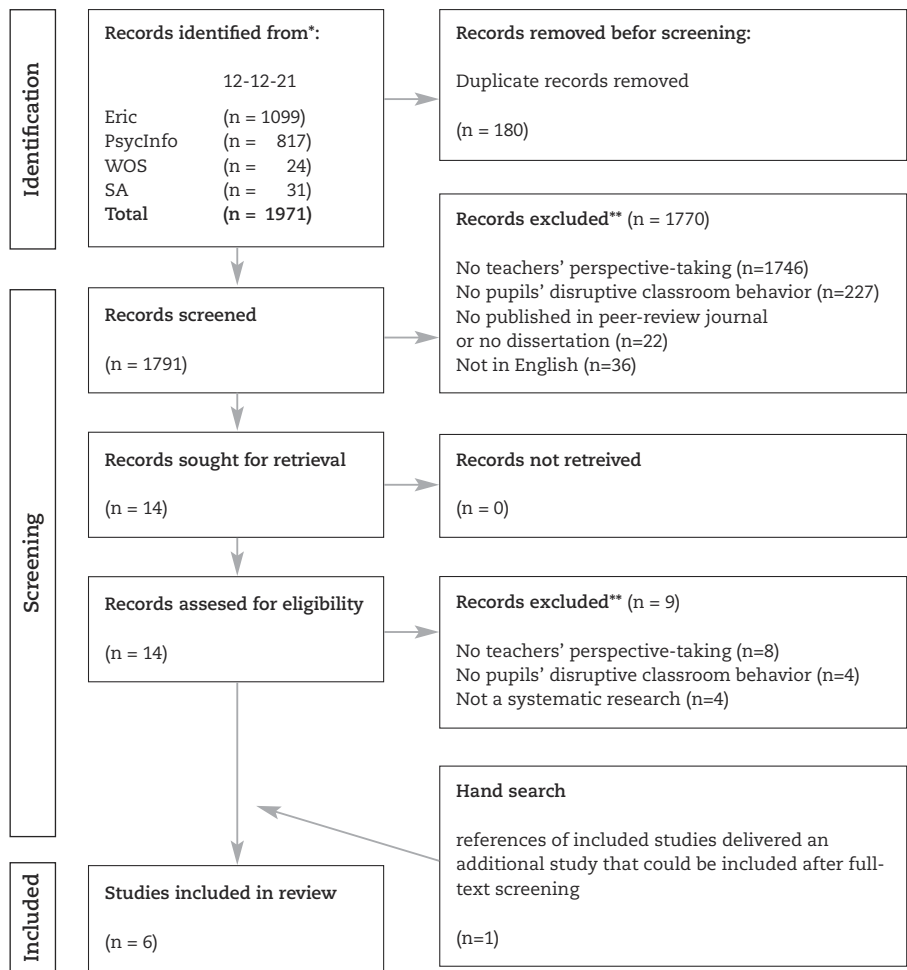


Figure 1, Prisma flow diagram for new systematic reviews (2020)

Results

One thousand seven hundred ninety-one screened records resulted in fourteen for full-text screening. *Figure 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-judgmental 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.

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) 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' mind-sets 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.

Description and Appraisal of Key Terms in Sources of Evidence

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., 2015; De Los Reyes et al., 2013; 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.

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.

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 Emphatic 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 et al., 2011; 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; Key2Teach 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 ($r = .37, p < .05$) 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.

Synthesis of Results

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.

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 and 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.

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 & Millett, 2019; Cole et al., 2016; 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, 2022, 2020). 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).

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.

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, 2022, 2020).

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.

Appendix A, Search Strings Four Databases

Eric versie 2 26-2-2021

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- 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*))
- 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
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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
-

Appendix B

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-hour 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 Informant: R + S Design: Q + 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 Informant: R + S Design: Qn + 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 families: 14 dyad-students with externalizing problem behavior, age 5 to 8	Explore teachers' experiences partnering with families of their students who are at-risk for emotional or behavioral disorders.	Embedded mixed-method collective case study	Tree keys to success for Home-School partnership: 1. The coaches encourage 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, under-studied, and congruent roles and expectations are important in partnering for families and teachers	8 + out of 9 Comparator group: - Measurements: 11/ Q, SI / 4 IPE Informant: S Design: Qn + Qn Research method level: 6
Okonofua et al.	2016 Peer-reviewed journal	The United States of America (California)	2014-2015	Teachers: Experiment 1: 39 Experiment 2: 31 math teachers Pupils: Experiment 1: 0 Experiment 2: 302 age 18 > Experiment 3: 1682 age 11 - 14	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: Qn + Qn Research method level: 2 and 4
Underwood	2010 dissertation for doctor degree	The United States of America (Tennessee)	Fall semester 2009	Teachers: 41 classroom teachers Pupils: 973 Age 11 to 14	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	Teachers: 178 Classroom teachers Pupils: 178 self-identified by teacher Age 10 - 11	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 empathic distress showed largely opposite findings: more negative misbehavior mindsets, greater relationship conflict, less competence, less problem-solving strategies, higher job burnout.	8 + out of 9 Comparator group - Measurements: 9 / Q / 8 IPE Informant: S Design: Qn Research method level: 7

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 Trial 3. Quasi-experimental trial 4. Cohort studies Longitudinal 5. Cohort studies 6. Case-control Studies 7. Cross-sectional surveys 8. Case Reports / Case Series (2 to 8 is unfiltered information) level of research inspired by Petticrew and Roberts (2003) and pyramid of Andy Puro (2014) <https://guides.himmelfarb.gwu.edu/ebm/studytypes>)

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 (Not in the article but Key2teach-Special coaching Manual, Van Veen et al., 2015)	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 experience: cognitive empathy. (Wink et al., 2021)
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Chapter 3

Teachers' Decision-Making Process Regarding Disruptive Behavior: An Exploration of Multiple- Perspective-Taking and Attribution

Under review

Astrid Ottenheim-Vliegen, Marion van Hattum, Sanne Weijers, Hanna Swaab,
and Wouter Staal

Abstract

Despite considerable investments, exclusionary practices of students with disruptive classroom behavior remain prevalent, negatively impacting their development and opportunities. Teachers' multiple-perspective-taking is considered important for forming balanced attributions and responsive pedagogical action.

Multiple-perspective-taking is an epistemic practice in which the teacher actively takes the perspectives of others and the situational context in relation to their own perspective when understanding behavior. It plays a central role in attribution processes as part of the decision-making. However, little is known about how teachers engage in this process in everyday decision-making.

This cross-sectional study explored teachers' multiple-perspective-taking and attribution patterns in the decision-making process regarding disruptive classroom behavior. Content analysis was conducted on 80 student-reports written by 41 primary-school teachers.

The findings show that teachers often acknowledged different perspectives but primarily interpreted behavior from their own standpoint, while responsibility for change was mainly attributed to the student. Multiple-perspective-taking did not consistently function as a habitual practice. These insights highlight the relevance of supporting a more balanced decision-making process.

Keywords: *teacher decision-making; multiple-perspective-taking; attribution processes; disruptive classroom behavior; inclusive education; content analysis*

Introduction

Looking more closely at teachers' decision-making process in handling disruptive classroom behavior becomes increasingly relevant, as mental disorders, exclusionary practices, and teacher burnout are increasing, despite large investments (Batstra et al., 2012; LiCalsi et al., 2021; Pijl, 2016; Visser et al., 2010; Wink et al., 2021; Welsh & Little, 2018). Exclusionary practices toward students with disruptive behavior negatively impact learning outcomes and social participation (LiCalsi et al., 2021; Welsh & Little, 2018). In the decision-making process, teachers' perceptions of their students' behavior influence the attributions they make and, consequently, the support students receive from the teacher (Aloe et al., 2014; Bru et al., 2002; Bryan et al., 2012; De Ruiter et al., 2019; LiCalsi et al., 2021; Okonofua et al., 2016; Reyes, 2006; Richards, 2012; Spilt et al., 2011; Weiner, 2010). For a bias-aware decision-process that broadens the interpretive space, multiple-perspective-taking may be promising (Galinsky & Moskowitz, 2000; Ottenheim-Vliegen et al., 2023).

Multiple-perspective-taking is an epistemic and dialogical practice in which the teacher actively takes the perspectives of others and the situational context in relation to their own perspective when making sense of behavior (Hyun & Marshall, 1997; Galinsky et al., 2008; Galinsky & Moskowitz, 2000; Gehlbach et al., 2012; Ottenheim-Vliegen et al., 2023; Parker et al., 2008). Following Hyun and Marshall (1997), multiple-perspective-taking is not a matter of adopting another's view, but a process of positioning one's own standpoint in dialogue with those of students, parents, and the learning-teaching-environment. This practice can contribute to more responsive pedagogical relationships and reduce escalation in responses to disruptive behavior (Hyun & Marshall, 1997; Okonofua et al., 2016; Ottenheim-Vliegen et al., 2023; Wink et al., 2021).

Although multiple-perspective-taking may have positive effects in handling disruptive classroom behavior, it remains an understudied topic. Existing research is limited and based mainly on semi-structured interviews or surveys in which teachers report their own interpretations (Ottenheim-Vliegen et al., 2023). Such self-reports are susceptible to confirmation, heuristic, and reconstruction biases (Brenner & DeLamater, 2016; Tversky & Marsh, 2000).

In the Dutch context, student-reports are used to support decision-making processes for students with special needs, including disruptive behavior. These interpretations shape the attributions teachers make about where the problem is located and where goals and support should be directed. Thus, multiple-perspective-taking

and attribution together form the core of teachers' decision-making process in choosing the needed support.

Despite its theoretical relevance, it remains unclear to what extent multiple-perspective-taking is actually used when teachers interpret disruptive classroom behavior in practice. A closer examination, therefore, requires clarifying the meaning of multiple-perspective-taking, how attributions are formed, and how these processes are embedded in the decision-making structure of student-reports.

Multiple-Perspective-taking

Multiple-perspective-taking is considered relevant in teachers' decision-making processes because student behavior emerges in interaction with multiple contextual layers. A classroom – and the behavior within it – cannot be separated from influences in the learning–teaching–environment, the home-situation, and the broader social-network (Bronfenbrenner & Morris, 2007).

The student-reports used in this study explicitly invite teachers to describe the student's situation across four perspectives: the Student; the Learning-Teaching-Environment; the Home-Situation; and the Social-Network. Within each perspective, teachers are encouraged to identify both protective and risk factors.

Taking different perspectives, that of another person and their environment, is not done automatically because it requires time and effort (Apperley, 2018; Cole & Millett, 2019; Cole et al., 2016; Epley et al., 2004; Surtees & Apperly, 2012; Yaniv & Choshen-Hillel, 2012b). People tend to default to their own standpoint, making so-called “egocentric” interpretations, common in everyday reasoning. Therefore, relying on a single perspective in the decision-making process increases the likelihood of biased interpretations of the behavior, as interpretations are more strongly influenced by personal assumptions and emotional investment (Gehlbach & Vriesema, 2019).

The current research on teachers' perspective-taking in the context of disruptive behavior has primarily focused on single-perspective-taking (e.g., the student's or parent's viewpoint) (Ottenheim-Vliegen et al., 2023), and it remains unclear whether and how teachers actually take multiple perspectives when making decisions in practice.

Attributions

Teachers' attributions refer to the perceived causes or intentions behind a student's behavior and play a central role in shaping teachers' responses and interactions (Weiner, 1986, 2000, 2010). Attributions influence not only the strategies teachers

use but also the teacher–student relationship and students' self-esteem and learning experiences (Almog & Shechtman, 2007; Batstra et al., 2012; Burssens et al., 2019; Jussim & Eccles, 1992; Rubie-Davies, 2006; Vettingburg & Walgrave, 2017; Wang & Hall, 2018).

However, attributions can be susceptible to bias. When interpretations are based primarily on one's own perspective, they may reflect personal-professional assumptions and prior classroom experiences rather than the broader educational and social context (Apperly, 2018; Chambers & Davis, 2012; Epley et al., 2004). Such biases can lead to underestimation or overestimation of students' needs, with consequences for the support and expectations they receive (Chambers & Davis, 2012).

Empirical studies suggest that teachers often attribute disruptive behavior to factors located within the student or the home-situation, whereas influences from the learning-teaching-environment or broader social-network are considered less frequently (Koskela & Lanas, 2016; Ysseldyke et al., 1983). Wang and Hall (2018) further showed that these attribution patterns may be systematic, although much of the evidence stems from retrospective self-reports.

Gehlbach and Vriesema's (2019) meta-bias framework suggests that such patterns may result from mechanisms of Sense of Self (self-protective interpretations) and Cognitive Efficiency (reducing cognitive effort when situations are complex). These mechanisms can lead teachers to overlook contextual explanations and focus primarily on changing student behavior (Almog & Shechtman, 2007; Vettingburg & Walgrave, 2017; Wang & Hall, 2018). In contrast, when teachers consider more environment-related attributions, they tend to report greater empathy, higher expectations, and more supportive instructional strategies, which are known to benefit students' development (Rubie-Davies, 2006; Wang & Hall, 2018).

Multiple-perspective-taking may help reduce the likelihood of biased interpretations by encouraging teachers to consider several contextual layers before forming decisions (Gehlbach & Vriesema, 2019; Yaniv & Choshen-Hillel, 2012a). In doing so, it may shape the attributions that guide decisions about support and, at the same time, foster more constructive and collaborative teacher–student interactions (Okonofua et al., 2016; Wink et al., 2021).

The Decision-Making Process

In the Dutch educational context, student-reports are used to support decision-making for students with special needs, including disruptive classroom behavior. This decision-making process is informed by the *Assessment for Intervention (AFI) framework* (Pameijer, 2017), which is embedded in national special-needs policy (Pameijer, 2016). AFI provides a systematic, collaborative, and potentially non-blaming decision-making approach aimed at understanding the student's situation comprehensively (Pameijer, 2006, 2017).

AFI organizes the decision-making process into four stages: *Observe, Understand, Plan, and Realize* (Figure 1). Within this framework, student-reports capture how teachers describe what they observe and how they make sense of the student's situation before planning support.

The reports, therefore, provide a naturalistic record of how teachers describe and interpret disruptive classroom behavior in everyday practice. Because these descriptions shape how support is planned and how the student is understood, they also participate in constructing educational reality (De Los Reyes & Kazdin, 2005; Koskela & Lanas, 2016; Lanas, 2019). The quality of the descriptions may therefore influence students' developmental opportunities in school. As such, the written descriptions not only reflect teachers' thinking but also actively participate in shaping the subsequent steps of decision-making. Because the decision-making process is transactional, teachers' multiple-perspective-taking shapes how behavior is interpreted in the Understand stage. The attributions formulated based on these interpretations guide which goals are set and where support is directed. In this way, multiple-perspective-taking shapes attribution, which subsequently informs planned action, such that each step in the decision-making process shapes the next.



↑ **Figure 1** Outline of the four stages in the transactional decision process of the student-reports

In sum, while multiple-perspective-taking and attribution are understood to play a central role in teachers' decision-making processes regarding disruptive classroom behavior, it is unclear to what extent teachers actually engage in multiple-perspective-taking during the decision-making process. Existing studies largely rely on retrospective self-reports, which provides insight into teachers' beliefs but do not show how interpretations are formed in practice. The student-reports used in Dutch educational practice provide a record of how teachers describe and interpret students' situations while planning support, making them a suitable context for examining multiple-perspective-taking and attribution in situ.

This study explores teachers' written descriptions in student-reports regarding disruptive classroom behavior to examine how multiple-perspective-taking and attribution appear in teachers' decision-making process, with a focus on three dimensions:

1. the extent to which teachers take multiple perspectives in their descriptions;
2. the quality of this multiple-perspective-taking;
3. the attributions teachers formulate about the causes of the behavior and the student's support needs.

Method

Design

This exploratory cross-sectional study examined how teachers' multiple-perspective-taking and attributions were reflected in their student-reports within the decision-making process regarding disruptive classroom behavior. The analyses explored variation in how teachers described, interpreted, and attributed disruptive behavior across reports.

Participants

Participants were qualified Dutch primary school teachers from 23 schools, belonging to ten school boards in eleven municipalities north of Amsterdam. All schools used the same student-reports for special needs support and were familiar with the Assessment for Intervention (AFI) framework.

A total of 41 teachers participated (40 female, 1 male), resulting in 80 teacher-student dyads. Teachers' ages ranged from 27 to 57 years ($M = 42.1$, $SD = 8.6$), with teaching experience ranging from 1 to 35 years ($M = 15.1$, $SD = 8.5$). Seven teachers taught students aged 4–6 years, 22 taught students aged 6–9 years, ten taught students aged 9–12 years, and two taught mixed-age groups. Thirty-nine teachers worked in mainstream primary education, and two in special education.

Teachers were asked to select students whose behavior they themselves experienced as disruptive in the classroom. Disruptive behavior is not a fixed diagnostic category but is interpreted through teachers' professional judgment within the norms and culture of the classroom and school (De Los Reyes & Kazdin, 2005; Koskela & Lanas, 2016; Van der Ploeg, 2011). This selection approach aligns with the aim of the study, which focuses on understanding how teachers interpret and make decisions regarding behavior they perceive as disruptive in their own practice.

Procedures

Teachers were recruited via flyers and group presentations with information about the research. Participation was voluntary. Teachers provided active informed consent, and school boards approved participation at the organizational level. All parents also provided active informed consent, approving the use of student-reports for research purposes. The study did not influence or intervene in the curriculum or learning situation of the students.

Following the focus on teachers' professional perceptions, no standardized diagnostic criteria or behavior checklists were used; but rather teachers' professional perception served as the main entry point.

The teachers did not receive any prior training for the purposes of this study. All participating schools were already used to working with the AFI-based student-reports as part of their regular special-needs support procedures. Teachers were therefore familiar with the structure and use of the reports prior to participation. The study did not introduce new practices or instructions; it examined teachers' existing use of the reports in their everyday decision-making.

Data were collected at the end of September 2021, six weeks into the school year. Teachers were aware that the reports would be used for research, but they were not informed about the specific research questions to avoid influencing descriptions.

Student-reports were pseudo-anonymized before analysis. Data management was carried out by Oberon BV Utrecht, the grant-holding research partner (40.5.19630.067). The research was approved by Radboud University, Nijmegen (Donders Institute for Brain, Cognition and Behaviour, November 16th, 2020), and adhered to the Declaration of Helsinki.

Measures

Thirty-nine teachers each wrote student-reports for two students whom they experienced as displaying disruptive classroom behavior. Two teachers wrote only one report because they had only one student they considered disruptive. In total, 80 student-reports from 41 teachers were collected.

The web-based student-reports are based on the Assessment for Intervention (AFI) framework and follow the four stages of the decision-making process: *Observe*, *Understand*, *Plan*, and *Realize*. For each student, teachers describe the situation across four perspectives: the *Student*, the *Learning-Teaching-Environment*, the *Home-Situation*, and the *Social-Network*. Within each perspective, teachers can identify protective and risk factors and describe their interpretations of the behavior.

Teachers decided how extensively they completed the reports and with whom they collaborated (e.g., students, parents, colleagues, special needs coordinators, or external professionals). As such, the reports provide a naturalistic record of how teachers describe what they observe and how they make sense of the student's situation in everyday practice.

This study focuses on the early interpretive stages of the AFI decision-making process. In the *Observe* stage, teachers describe what they see using the four perspectives as a structure; these descriptions form the basis for examining how teachers take multiple perspectives during the descriptive phase of sense-making. In the *Understand* stage, teachers integrate this information into an explanation of the behavior (integrative picture) and formulate goals and support needs, which reflect their attributions about the causes of the behavior and the required locus of change and support.

The subsequent stages (*Plan* and *Realize*), in which actions are selected and implemented, were not included.

Content Analyses and Operationalizations

1. Operationalization of multiple-perspective-taking in the stage *Observe*

To assess the nature of teachers' multiple-perspective-taking, the study focused on the amount (number of characters) and distribution of text, the perspective-taker, and the quality of the multiple-perspective-taking.

1a. Amount and distributions of text across the taken perspectives *Student*, *Learning-Teaching-Environment*, *Home-Situation*, *Social-Network*:

The number of characters in the four perspectives *Student*, *Learning-Teaching-Environment*, *Home-Situation*, and *Social-Network* was calculated and compared.

1b. Amount and distribution of text across the taken perspectives *Strengths and Weakness*:

The number of characters describing strengths and weaknesses was calculated, as well as its distribution across the four perspectives (*Student*, *Learning-Teaching-Environment*, *Home-Situation*, *Social-Network*).

1c. *The perspective-taker:*

Each observation segment was coded to identify the perspective-taker, that of the individual or group from whose viewpoint the observation was written (the student, teacher, teacher's co-worker, school-team, parents, professional, social-network, others, or unspecified).

1d. *Quality of multiple-perspective-taking observations*

To assess the quality of teachers' multiple-perspective-taking, the written descriptions under each of the four perspectives were segmented and coded into three types of observations: cinematic observations, global observations, or interpretations. These categories represent increasing levels of inferential processing and decreasing levels of descriptive specificity. Cinematic observations are considered higher quality because they rely on concrete, observable behaviors. Global observations are less specific, and interpretative statements reflect lower quality, as they introduce subjective inference.

A cinematic observation is a concrete description of behavior or spoken words that enables the reader to visualize the situation and mentally reenact it (Koning, 1982; Peterson & Elam, 2020; Van Aarle & Van Elk, 2017).

A *global observation* describes behavior in a more general and summarizing way; it is recognizable but lacks the level of detail needed for reenactment (Koning, 1982).

An interpretation reflects an inferred meaning rather than a direct description. Here, the perspective-taker's implicit theories, beliefs, past experiences, or evaluative language may shape the description (Koning, 1982; Peterson & Elam, 2020). Common interpretive markers include evaluative or generalized terms such as *always*, *never*, *many*, *angry*, *small*, or *big*.

2. Operationalization of multiple-perspective-taking in the stage Understand

The Integrative picture

Within the AFI framework, the integrative picture brings together information from the four perspectives into a coherent explanation that can guide goal-setting and planning of support (Pameijer & van Beukering, 2015; Pameijer, 2017). In this study, the integrative picture was therefore analyzed as an indicator of how teachers translated multiple-perspective-taking into an interpretive explanation of the disruptive behavior.

To assess multiple-perspective-taking in the integrative picture, two aspects were explored:

2a. Presence of perspectives

Each integrative picture was coded (yes/no per perspective) for the presence or absence of references to the Student, the Learning-Teaching-Environment, the Home-Situation, and the Social-Network.

2b. Depth of multiple-perspective-taking

To explore depth, the integrative pictures were examined for whether they contained zero, one, or more strengths and weaknesses for each of the four perspectives (Student, Learning-Teaching-Environment, Home-Situation, Social-Network). Strengths were considered contextual resources, whereas weaknesses were considered areas requiring change.

3. Operationalization of the attributions in the stage Understand

Attributions based on goals and support needs

In the AFI framework, attributions are reflected in how teachers formulate goals (what needs to change) and support needs (who or what is required to support that change) within the Understand stage. In this study, goals and needs were therefore analyzed as indicators of how teachers attribute the causes of the disruptive behavior and where they locate responsibility for change.

Teachers' written descriptions in the Understand stage were segmented and coded according to:

- The perspective to which the goal or need referred (Student, Learning-Teaching-Environment, Home-Situation, Social-Network), and
- The locus of change or responsibility
(who or what is positioned as the actor for change: student, teacher, peers/class, school, parents, social network, other, or unclear).

This allowed exploration of how teachers located the causes of behavior and where they directed change efforts.

Coding and comparison

3a. Distribution of goals across perspectives

- Frequency of goals attributed to each of the four perspectives
- (Student, Learning-Teaching-Environment, Home-Situation, Social-Network).

3b. Locus of change (who needs to change)

- Frequency and distribution of goals coded by the attributed agent
(student, teacher, peers/class, school, parents, social network, other, unclear).

3c. *Locus of support (who needs to act)*

- Frequency and distribution of needs coded according to who or what is positioned to meet the support needs (student, teacher, peers/class, school, parents, social network, other, unclear).

Analysis

The analysis proceeded in several stages. First, the amount (number of characters) and distribution of text in each section of the student-reports were counted to examine how teachers distributed their written descriptions across perspectives relevant to multiple-perspective-taking. Next, all written descriptions were segmented and coded according to a structured codebook and coding manual. Segmentation was applied whenever multiple observations or meanings appeared within a single sentence. Empty sections were coded as zero.

Three trained research assistants (master students in sociology and orthopedagogy) executed the segmentation and coding under the supervision of a senior educational researcher. Using multiple coders reduces the possibility of individual biases, such as confirmation bias (McDonald et al., 2019).

Inter-rater reliability (IRR) was used to gauge the consistency of the coding (McDonald et al., 2019). All disagreements were discussed and resolved within the research team. Once a satisfactory agreement was reached, the coders each independently coded three student-reports for IRR assessment. After substantial agreement was achieved ($\kappa \geq .60$), the remaining reports were coded independently. Because of the dichotomous coding, Cohen's Kappa (Cohen, 1960) was used. For each subset of codes, mean Kappa values across coder pairs were calculated; values $\geq .60$ were considered substantial.

Descriptive analyses were conducted to explore multiple-perspective-taking and attribution patterns in the student-reports. Analyses were performed both at the level of individual reports and aggregated across teachers. All analyses were conducted in IBM SPSS Statistics. No missing data were present.

Results

The analyses follow the structure of the student-reports: RQ1 (extent of multiple-perspective-taking) is examined in both the Observe and Understand stages, RQ2 (quality of multiple-perspective-taking) in the Observe stage, and RQ3 (attributions) in the Understand stage. Descriptive statistics are reported using counts, percentages, means, and ranges where appropriate.

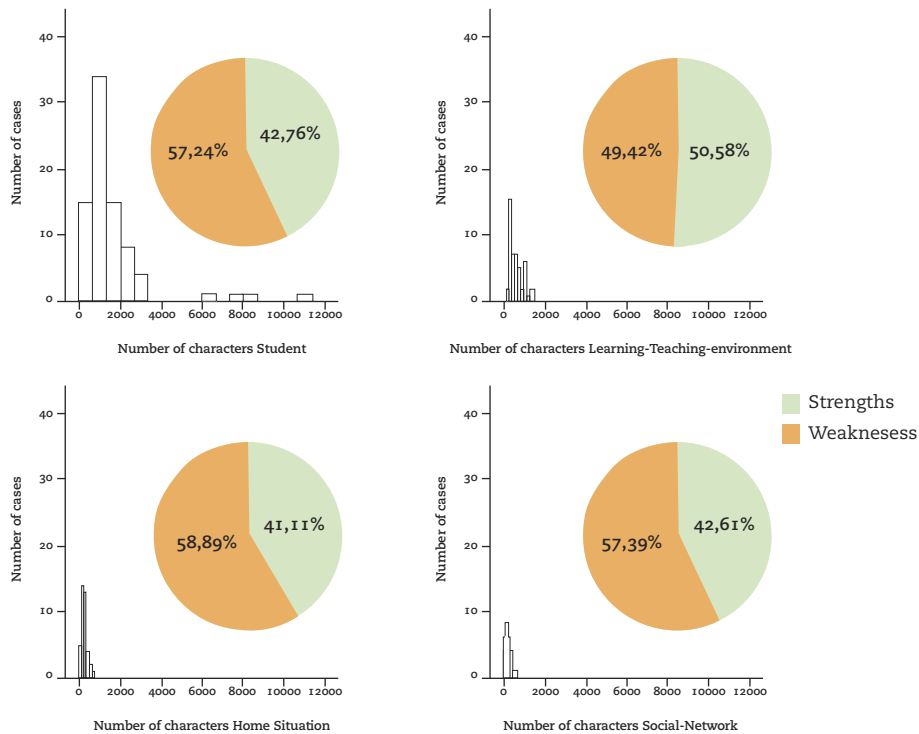
Multiple-Perspective-Taking in the Stage Observe

The student perspective was described in all reports (100%). The learning-teaching-environment perspective was present in 74% of reports, the home-situation perspective in 54%, and the social-network perspective in 33% of reports (Table 1). The number of characters per perspective varied across reports, with the student perspective containing the largest volume of text overall.

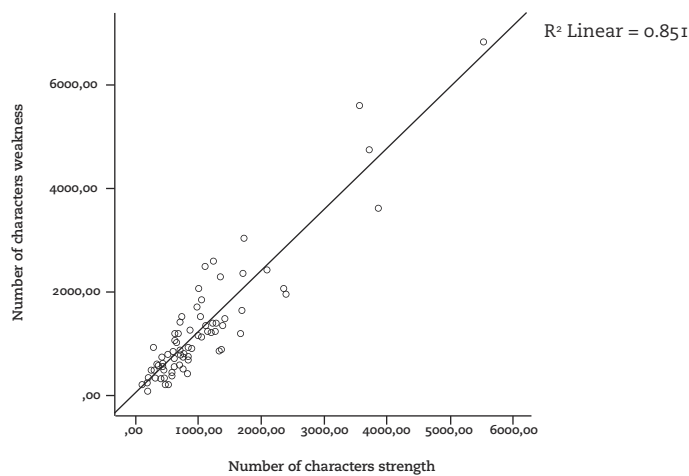
Across perspectives, more descriptions were coded as weaknesses ($M = 1240.35$) than as strengths ($M = 1014.33$). Strengths and weaknesses were positively correlated ($r = .92, p < .01$), indicating that when more was written, more of both types were recorded (Figure 3). The distribution of strengths and weaknesses across perspectives is shown in Figure 2; only in the learning-teaching-environment perspective did strengths and weaknesses appear in approximately similar proportions.

Taken Perspective	Number of cases with text for the perspective (%)	Sum number of characters	The mean number of characters (SD)	Range number of characters: min - max	Mean number of characters Strengths (SD)	The mean number of characters Weaknesses (SD)
Student	80 (100%)	128 635 (72%)	1607.90 (1713.69)	275 – 10 823	687.55 (766.01)	920.39 (980.83)
Learning-Teaching-Environment	59 (74%)	33 726 (19%)	571.60 (312.14)	167 – 1365	283.55 (200.81)	277.02 (148.67)
Home-Situation	43 (54%)	10 645 (6%)	247.60 (134.78)	44 – 600	97.66 (62.16)	139.86 (95.82)
Social network	26 (33%)	5461 (3%)	210.04 (148.46)	42 – 627	85.24 (69.89)	114.78 (85.18)
Total	80 (100%)	178 467 (100%)	2230.84 (1994.19)	528 – 13 415	1014.33 (887.54)	1240.35 (1137.68)

↑ **Table 1** Overview of the frequencies, descriptive analysis of the measured characters with the distribution over the four perspectives, and Strengths and Weaknesses

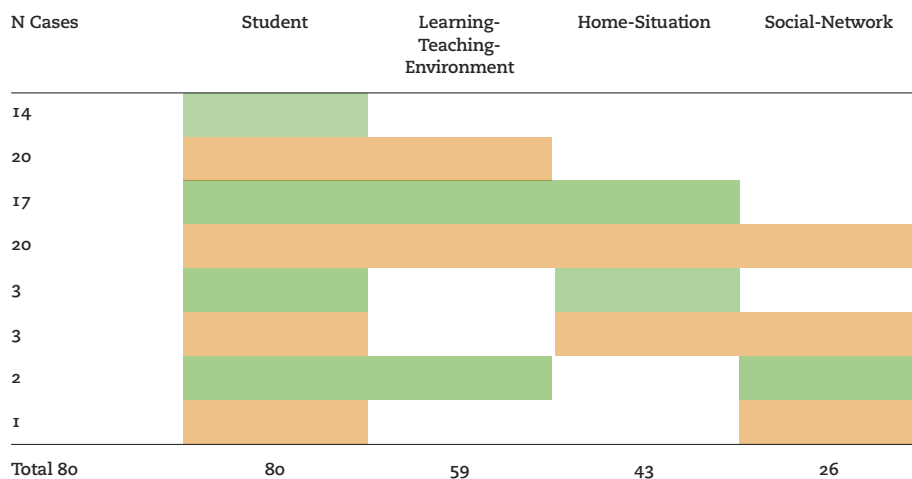


↑ **Figure 2** Distributions and frequencies across the perspectives Student, Learning-Teaching-Environment, Home-Situation, and Social-Network, with the distributions of Strengths and Weaknesses over the four perspectives.



↑ **Figure 3** Correlation Weaknesses and Strengths

Table 2 shows the combinations of perspectives included within reports. Twenty-five percent of the reports contained descriptions from all four perspectives, and 82.5% included at least two perspectives. In 17.5% of reports, only the student perspective was described. Eleven teachers produced reports that included only the student perspective; three of them did so in both of their reports.



↑ **Table 2** The taken perspectives and measured combinations of the taken perspectives within the cases, and the number of teachers

The Perspective-Taker. Across all observation segments, the teacher was the perspective-taker in 92% of cases. In 7.1% of segments, the perspective-taker could not be identified. The student was the perspective-taker in 0.5% of segments, and parents in 0.4%. The remaining categories (co-worker, school team, professionals, social network, others) occurred only incidentally.

The Quality of the Multiple-Perspective-Taking Observations. Across all coded segments, 1.2% were classified as cinematic observations, 17.6% as global observations, and 81.2% as interpretative statements (Table 3). Cinematic observations appeared in 31 reports (39%), global observations in 79 reports (99%), and interpretative statements in all 80 reports. Interpretative statements dominated across all perspectives, and teachers rarely described behavior in concrete, observable terms.

Coded observation type	Observation segments coded as Strengths	Observation segments Coded as Weakness	Total observation segments
Cinematic	15 (0.6 %)	42 (1.6%)	57 (1.2%)
Global	468 (20%)	382 (15.4%)	850 (17.6%)
Interpretation	1858 (79.4 %)	2064 (83%)	3922 (81.2%)
Total	2341 (100%)	2488 (100%)	4829 (100%)

↑ **Table 3** *The distribution of the quality type of multiple-perspective-taking observation (N = 80 cases)*

Multiple-Perspective-Taking in the Stage Understand

Seventy-nine of the 80 reports contained an integrative picture. The Student perspective was represented in 92% of these integrative pictures. The Learning-Teaching-Environment perspective appeared in 15% of integrative pictures, the Home-Situation perspective in 10%, and the Social-Network perspective in 8%. Table 4 shows the distribution of Strengths and Weaknesses across perspectives. Sixty-two percent of the reports did not mention any Student Strengths; 38% included at least one. Nineteen percent of the reports included Strengths for the Learning-Teaching-Environment, and only one report included Strengths for the Home-Situation or Social-Network.

Weaknesses were reported more frequently. Ninety-nine percent of the reports described Student Weaknesses, 13% included Weaknesses in the Learning-Teaching-Environment, and Weaknesses in the Home-Situation and Social-Network perspectives appeared rarely.

Number of Segments in x cases	Strength				Weaknesses			
	Student	Learning-Teaching-Environment	Home-Situation	Social-Network	Student	Learning-Teaching-Environment	Home-Situation	Social-Network
0	49	64	78	78	1	69	76	78
1	19	10	1	1	4	9	3	1
>1	11	5	0	0	74	1	0	0

↑ **Table 4** *The distribution of segments' Strengths and Weaknesses over the perspectives Student, Learning-Teaching-Environment, Home-Situation, and Social-Network in the integrative pictures (N = 79)*

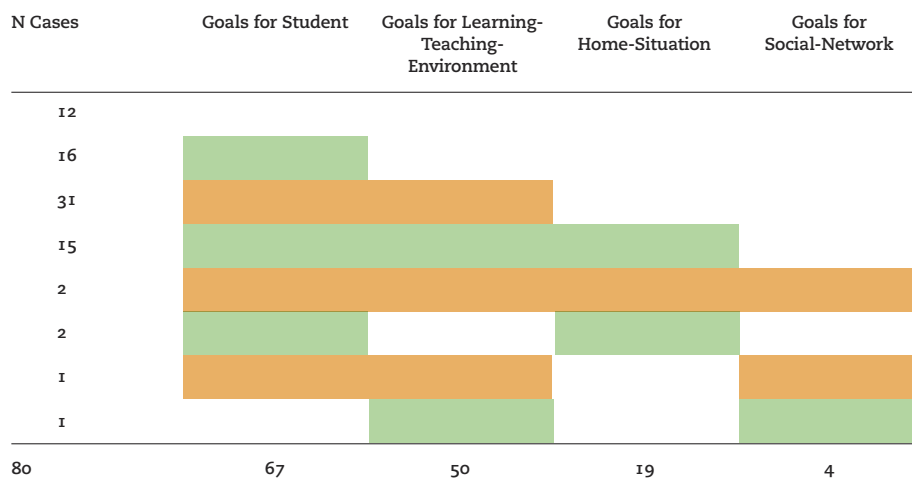
Attributions in the Stage Understand

Attributed Goals. In most reports, goals were attributed primarily to the student. As shown in Table 5, 84% of reports contained goals directed at the student, representing 55% of all formulated goals. Goals directed at the Learning-Teaching-Environment were present in 63% of reports (33% of all goals), while goals attributed to the home situation (9%) and social network (3%) were less frequent. Twelve reports (15%) contained no goals.

Table 6 shows the combinations of attributed goals across perspectives. The most frequent combination consisted of goals attributed to both the student and the learning-teaching-environment (31 reports). Sixty-five percent of reports included goals distributed across more than one perspective.

Goals	N Cases	Goals: Sum	M	SD
Non	12 (15%)			
Student	67 (84%)	232 (55%)	3.46	1.61
Learning-Teaching-Environment	50 (63%)	141 (33%)	2.82	1.61
Home-Situation	19 (24%)	37 (9%)	1.94	1.03
Social-Network	4 (5%)	14 (3%)	3.50	3.32

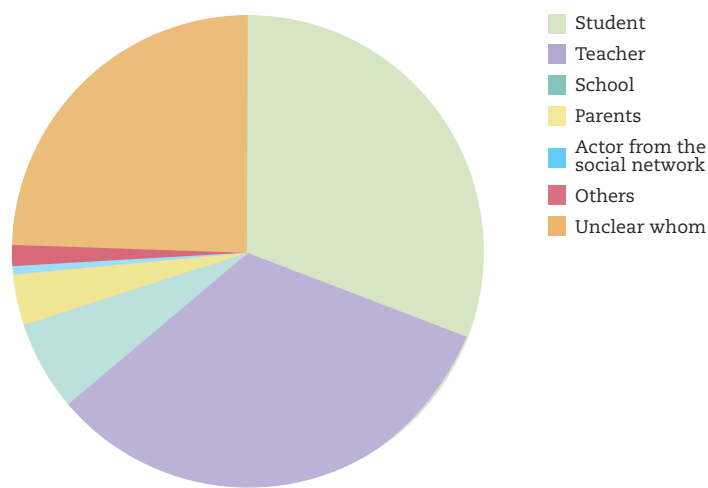
↑ **Table 5** The distribution of attributed goals to the four perspectives: Student, Learning-Teaching-Environment, Home-Situation, and Social-Network (N = 80)



↑ **Table 6** The distribution of goals over the four perspectives: Student, Learning-Teaching-Environment, Home-Situation, and Social-Network (N = 80)

Locus of Control: Who or What Needs to Change. Across all goals, 67% were attributed to the student as the agent of change, and 17% to the teacher. A smaller proportion of goals referred to changes in the home situation (4%) or the school context (3%). In 8% of cases, the actor responsible for change was unclear.

Controllability: Who is the Actor to Fulfill the Needs. Across all formulated needs, 31% were attributed to the student and 33% to the teacher as the actor responsible for fulfilling the need (Figure 4). Needs attributed to the school (6%) and to parents (3%) occurred less frequently. In 24% of cases, the actor responsible for fulfilling the need was not specified.



↑ **Figure 4** The distribution of the attributed actor to fulfill the needs

Discussion

This cross-sectional study explored the extent and nature of the representation of multiple-perspective-taking and attribution in teachers’ written descriptions within the decision-making process regarding classroom behavior they perceived as disruptive. Eighty student-reports written by 41 teachers were analyzed. The study focused on the Observe and Understand stages of the AFI-based decision-making process, in which teachers describe and construct an understanding of the situation prior to planning support.

The findings show that the Student perspective was taken in all reports, while other perspectives appeared less consistently. Although most reports included at least one additional perspective, the teacher was the primary perspective-taker in nearly all segments, and the majority of descriptions consisted of interpretative statements rather than concrete observations. This suggests that multiple perspectives were acknowledged, but were primarily described through the teacher's own interpretive lens in their written descriptions.

Across perspectives, weaknesses were mentioned more frequently than strengths, particularly in descriptions of the Student, the Home-Situation, and the Social-Network. Only in the Learning-Teaching-Environment were strengths more prevalent. A similar pattern emerged in the Understand stage: the integrative picture focused primarily on the student's weaknesses, while strengths and contextual factors were included far less often.

This interpretive focus was reflected in the attributions. Most goals were formulated for the Student, and the locus of control was predominantly placed with the student as the one who needed to change. While needs were also attributed to teachers in a substantial proportion of the reports, it remained unclear who was considered responsible for addressing them. Overall, the findings indicate a decision-making pattern in which both the interpretation of behavior and the locus of change are centered on the student, rather than shared across the learning-teaching-environment.

These patterns emerged against a background of variability in how teachers completed the reports. In some reports, only the Student perspective was completed, whereas others included two, three, or all four perspectives. The amount of text written within each perspective differed between reports, as did the balance between strengths and weaknesses. A similar variability appeared in the integrative pictures: in some reports, contextual strengths or environment-related factors were mentioned, whereas in others the explanation consisted solely of student-focused weaknesses.

The AFI-based student-reports are designed to stimulate multiple-perspective-taking and to reduce attribution biases when developing support plans. The findings indicate a gap between the intended function of the reports and their use in practice. Most reports included more than one perspective; however, the large proportion of interpretative statements, the emphasis on student weaknesses, and the predominance of goals attributed to the student suggest that teachers largely

reasoned from their own perspective and interpreted the behavior as primarily located within the student. This pattern aligns with earlier work showing that teachers tend to locate disruptive behavior within the student (Armstrong, 2014) and with studies documenting student-controlled attribution preferences (Koskela & Lanas, 2026; Wang & Hall, 2018; Ysseldyke et al., 1983). In addition, teachers are generally confident about the quality of their classroom environment (Dobbelaer, 2019; Koskela & Lanas, 2016), which may help explain why the Learning-Teaching-Environment perspective contained relatively more strengths than weaknesses, alongside the high proportion of interpretative descriptions.

Research shows that individuals naturally tend to view situations from their own perspective (Apperley, 2018; Cole & Millett, 2019; Cole et al., 2016; Epley et al., 2004; Surtees & Apperly, 2012; Yaniv & Choshen-Hillel, 2012a). Although this is a normal cognitive tendency, consistently prioritizing the teacher's own perspective and locating responsibility for change primarily with the student can restrict the range of possible supportive actions (Fontaine, 2012). The self-perspective can be "ego-centrally" biased (Epley et al., 2004; Gehlbach & Vriesema, 2019; Surtees & Apperly, 2012) and may be inconsistent and build on implicit theories (Peterson & Elam, 2020) that fuel attributions and mediate coping (Hong et al., 1999; Weiner, 2010). The one-sided somewhat judgmental interpretations written as perspective-taking observations may hinder the development of a contextualized understanding of the student's behavior.

AFI explicitly encourages collaboration with students and parents to surface differences in perspectives. Since individuals often interpret the same behavior differently (De Los Reyes & Kazdin, 2005), such collaboration is essential to building a shared understanding that supports effective intervention (Pameijer, 2017). This aligns with needs-based assessment approaches, which emphasize that support decisions should be grounded in jointly constructed interpretations rather than problem labels or child-centered attributions (Pameijer, 2006).

The focus on weaknesses can reduce attention to protective factors, whereas a strength-based approach is known to support developmental trajectories (Chen & Krieger, 2023; Hamby et al., 2018; Morrison et al., 2006). The combination of a focus on weaknesses and student-located goals aligns with research showing that attributions influence coping choices and can shape whether responses are supportive or may hinder students' development (Almog & Shechtman, 2007; Burssens et al., 2019; Mahvar et al., 2018; Vettenburg & Walgrave, 2017; Wang & Hall, 2018).

Understanding how teachers construct meaning in the early, relational stages of

the decision-making process is essential because these interpretations shape subsequent interaction patterns, support strategies, and teacher-student relationships (Gläser-Zikuda & Fuß, 2008; Jussim & Eccles, 1992; Rubie-Davies, 2006; Vettenburg & Walgrave, 2017). A sense-making process that is primarily anchored in the teacher's own perspective may risk reinforcing misinterpretations, relational tension, exclusionary responses, and elevated stress for both teachers and students as the emotional classroom climate is relationally co-constructed (Aloe et al., 2014; Bru et al., 2002; Gläser-Zikuda & Fuß, 2008; LiCalsi et al., 2021; Sandilos et al., 2018; Welsh & Little, 2018).

Although multiple-perspective-taking is recognized as a core component of responsive and inclusive pedagogical practice (Hyun & Marshall, 1997), this study suggests that it is not yet a habitual or integrated part of everyday decision-making. As a consequence, resulting attributions may lean toward student-controlled explanations that limit the range of possible supportive actions.

Limitations

The present study aimed to explore teachers' multiple-perspective-taking in their actual practice. The AFI-based web tool used in this context provides mnemonic rubrics that encourage teachers to consider different perspectives, with more rubrics available for the student perspective. However, the presence of prompts does not determine how teachers use them. The variation in the distribution of perspectives across the reports suggests that teachers exercised meaningful choice in what they attended to and recorded. The findings, therefore, reflect teachers' actual decision-making rather than a direct effect of the report structure.

The participating teachers selected students whom they themselves experienced as displaying disruptive classroom behavior. As such, the reports do not necessarily reflect cases in which the full formal decision-making procedure, such as extensive collaboration with parents or external professionals, was initiated. This perception-based sampling aligns with the purpose of the study, which was to investigate how teachers make sense of behavior they experience as challenging within their own classrooms. Because disruptive behavior is contextually interpreted and shaped by classroom norms, professional judgment, and school culture, the findings should not be generalized to all forms of disruptive behavior. Instead, they provide insight into the interpretive processes that guide teachers' early decision-making.

Finally, as this is an exploratory cross-sectional study conducted within a single regional context, future research in other educational contexts and with longitudinal

designs would help to deepen understanding of how multiple-perspective-taking develops and can be supported over time.

Conclusions

This study explored the extent and ways in which teachers engaged in multiple-perspective-taking and attribution when making decisions regarding support for students whose behavior they perceived as disruptive. The findings indicate that, although teachers often acknowledge more than one perspective, their descriptions and attributions were primarily formulated from a teacher-centered interpretive position, while responsibility for change was mainly located with the student. Multiple-perspective-taking was present as a procedural element of the decision-making process, but it had not yet been embedded as a habitual practice.

This study contributes empirical insight into how multiple-perspective-taking is enacted in the decision-making process, showing that it is not yet a habitual epistemic practice.

Following Biesta's (2020) view of educational practice as a matter of pedagogical judgment enacted in relation to others, strengthening teachers' interpretive space is an important part of supporting educational improvement. Enhancing the ability to consider how behavior emerges within the Learning-Teaching-Environment may expand the range of possible responses in moments of uncertainty or tension. Prior research shows that perspective-taking and interpretive capacities can be developed through reflective and relational forms of professional learning (Gehlbach et al., 2012; Hyun & Marshall, 1997; Wink et al., 2021).

Future research may therefore examine how such professional learning unfolds in the situated, relational practice of classrooms, where interpretations, emotions, and responses arise in real time. Investing in these capacities may contribute to teachers' sense of professional agency, to more inclusive and responsive classroom relations, and to developmental opportunities for students whose behavior challenges classroom norms.

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Chapter 4

Broadening Teachers' Interpretive Frameworks of Disruptive Behavior:

A Design-Based Study of Multiple-Perspective- Taking in a Professional Learning Program

Under review

Astrid Ottenheim-Vliegen, Marion van Hattum, Hanna Swaab, and Wouter Staal

Abstract

Disruptive classroom behavior challenges student learning, teacher well-being, and professional agency. Teachers often interpret such behavior through individualized and deficit-oriented lenses. This design-based study explores how teachers experience and articulate shifts in their interpretive frameworks through engagement in multiple-perspective-taking as an epistemic practice. Drawing on a co-designed learning program as an empirical context, 30 primary school teachers participated over a seven-month period. Data from written reflections and final presentations were analyzed to examine teachers' experienced learning and reported shifts in their interpretive frameworks. Findings indicate perceived broadening of interpretive frameworks, alongside changes in enacted agency and relational dynamics. Participants described increased awareness of attributions, expanded pedagogical repertoires, and strengthened relationships with students and parents. The study contributes to teacher education research by offering empirical insight into how professional learning designs may create conditions for broadening teachers' interpretive frameworks of disruptive classroom behavior through multiple-perspective-taking.

Keywords: *multiple-perspective-taking, teacher learning, teacher interpretation, teacher agency, classroom interaction, disruptive classroom behavior*

Introduction

Disruptive behavior in classrooms is a pressing concern in education systems. International surveys report that 30-40% of teachers regularly face behavioral disruptions from students that interfere with teaching and learning (NCES, 2022; OECD, 2019). These challenges negatively affect students' learning conditions and contribute to teacher stress, emotional exhaustion, and reduced self-efficacy (Collie et al., 2012; Spilt et al., 2011). Teachers who experience persistent classroom behavioral disruptions report lower job satisfaction, diminished relational connections, and a weakened sense of professional agency (Hagenauer et al., 2015; Jennings & Greenberg, 2009; Klassen & Chiu, 2010).

Decision-making by teachers in classroom interactions involves rapid, iterative cycles of perceiving, interpreting, and acting in response to students' learning needs, often under conditions of time pressure and uncertainty. Cognitive Information Processing models describe how such decision processes emerge from the dynamic interplay between selective attention, the constraints and affordances of working memory, and feedback from previous encounters and the availability of prior knowledge and experience that is captured in preferred behavioral responses that are retrieved from long-term memory (Atkinson & Shiffrin, 1968; Miller-Cotto & Gordon, 2024). Within this framework, cognitive processing is inherently selective and bounded. What teachers notice, how student behavior is interpreted, and which responses become available, are shaped by cognitive load, prior interpretive habits and beliefs, and momentary regulatory capacity. Importantly, cognitive processing in classroom interaction includes sense-making processes through which teachers attribute meaning to students' behavior in relation to contextual cues, relational histories, and perceived student needs (Fives & Buehl, 2012; Wang & Hall, 2018).

Emotional arousal further modulates this process by influencing attentional focus, working-memory capacity, and cognitive control, thereby shaping teachers' capacity for responsive pedagogical action (Jennings & Greenberg, 2009; Hagenauer et al., 2015). Cognitive and emotional processing are therefore jointly implicated in teachers' responsiveness: their ability to tolerate ambiguity, remain attuned to the student, and enact context-sensitive judgments in the moment of interaction. Over time, these iterative cognitive and emotional sense-making processes tend to consolidate into more stable interpretive beliefs.

A substantial body of research shows that teachers' beliefs, often implicit, emotionally charged, and shaped by personal and professional experiences, play a

crucial role in how they (consciously or unconsciously) explain student behavior and act upon it (Fives & Buehl, 2012; Wang et al., 2024). These beliefs shape interpretation (by attribution) and action, and influence pedagogical decisions, stress responses, and teachers' sense of agency in the classroom.

Efforts to address behavioral diversity through individualized, student-specific approaches often rely on classification-based reasoning, locating the 'problem' primarily within the student and tending to privilege descriptive categorization of behavior over interpretation of the situational and interactional dynamics in which it unfolds (Batstra et al., 2021; Ottenheim-Vliegen et al., 2025a). While such interpretative models may offer the comfort of structure and recognition, they tend to narrow interpretive scope and foster exclusionary (classification) practices that prioritize behavioral regulation over cognitive and emotional support needs (Florian & Black-Hawkins, 2011; Welsh & Little, 2018). The resulting discourse often prioritizes control and compliance over contextual and relational responsiveness (Batstra et al., 2021; Graham, 2015).

In the search for more effective and inclusive ways of addressing behavioral adversity in the classroom, research on professional learning environments adaptive to students' support needs has increasingly shifted from describing teachers' student-focused interpretive frameworks toward examining how these frameworks can be expanded and transformed into more contextual and interaction-focused understandings of the dynamics that shape student behavior (Fives & Buehl, 2012; Okonofua et al., 2016; Ottenheim-Vliegen et al., 2023a; Wang et al., 2024; Wang & Hall, 2018). These frameworks mediate how teachers perceive and respond to student behavior by appraising classroom interactions through pedagogical and affective lenses and thereby aim to strengthen the adaptive actions of teachers to cope with disruptive classroom behavior and, at the same time, support the student in behavior regulation.

Drawing on biopsychosocial-ecological research (Biesta, 2020; Borsboom & Cramer, 2013; Bronfenbrenner & Morris, 2007; Frenzel et al., 2018; Steenbeek & Van Geert, 2013), this shift stimulates a broadening of normative interpretive repertoires toward divergent and mereological reasoning. Divergent reasoning, within teachers' interpretative framework, recognizes that behavior results from multiple interacting decision-related cognitive and emotional as well as environmental mechanisms, and mereological reasoning foregrounds parts-whole relations and contextual interdependencies (Florian & Black-Hawkins, 2011; Ottenheim-Vliegen et al., 2025b). When cultivated as a professional norm, these dispositions are more likely to be enacted in practice. Strengthening such repertoires may open alternative pathways

for explaining behavior and, consequently, for actions that are more inclusive, developmentally attuned, and ethically grounded (Florian, 2014).

A key capacity in expanding interpretive diversity is multiple-perspective-taking (Gehlbach, 2017; Hyun & Marshall, 1997; Okonofua et al., 2016; Wink et al., 2021).

A scoping review of teachers' perspective-taking in relation to disruptive classroom behavior shows that the concept is described across different strands of literature and reflects multiple dimensions (Ottenheim-Vliegen et al., 2023a). Building on these insights, this study approaches multiple-perspective-taking as a competence that integrates epistemic, relational, and embodied dimensions. It refers to an inquiry-driven and intentional positioning of the self in relation to others and context. Within this process, teachers learn to take multiple viewpoints, including those of the student, the pedagogical relationship, the broader ecology (classmates, parents, colleagues, school structures, and support networks), and the self as interpreter. This involves deliberately adopting and temporarily enacting alternative standpoints and critically testing them, allowing teachers to decenter from their default interpretive frames. Here, epistemic learning concerns how pedagogical understanding develops through processes of interpretation and attribution – how meanings are formed, questioned, and revised in response to unfolding situations (Biesta, 2020). These processes become salient, for example, when teachers experience ambiguity, notice escalation in problematic behavior, or sense an interpretive mismatch in classroom interactions, and must regulate their affect, attune relationally, and respond in the moment (embodiment; Gallagher, 2005).

This competence entails the capacity to take multiple perspectives into account when warranted – for instance, in situations marked by ambiguity, escalating problematic behavior, or interpretive mismatch. Such reorientation does not occur automatically; it requires deliberate enactment through affective regulation and relational attunement. In this way, multiple-perspective-taking enables context-sensitive pedagogical judgment in action.

This practice aligns with a mentalizing stance, in which behavior is interpreted through the lens of the other's inner states, while tolerating ambiguity and avoiding premature closure (Fonagy et al., 2018; Nišponská, 2023). It requires a high degree of cognitive control (cognitive flexibility and inhibition) (Surtees & Apperly, 2012), affective regulation (Hagenauer et al., 2015), and epistemic openness, understood as recognizing the limits of one's own perspective (Sivakumar & Boon, 2024).

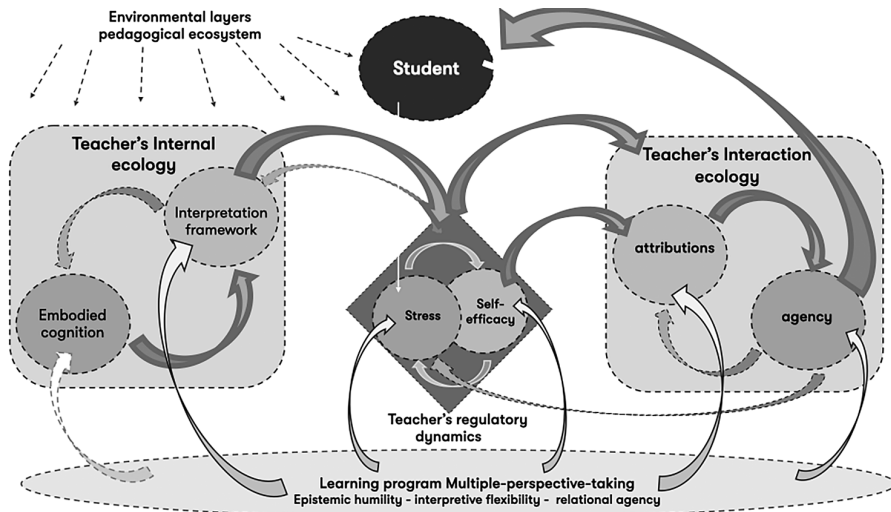
Through hypothesis generation (forming provisional and testable interpretations), teachers can question attributions and explore alternative meanings ("Would I feel or act this way in such a situation?") (Eyal et al., 2018). This reflective detour can

interrupt routinized interpretations and create space for pedagogical judgment and responsive action (Gehlbach, 2017; Okonofua et al., 2016). As interpretive diversity increases, explanatory accounts and action repertoires expand (Wink et al., 2021). This expansion is the foundation for professional agency and fuels meaningful action within contextual constraints (Biesta & Tedder, 2007; Edwards, 2010). In this way, multiple-perspective-taking becomes a generative force, connecting observation to interpretation, emotion to regulation, and understanding to pedagogical judgment in action, driven by responsiveness to the pedagogical needs of the student.

This is not a purely cognitive process; bodily processes play a constitutive role in professional judgment, as described in embodied cognition. Enactive and neuropsychological accounts show that perception and attribution are embodied experiences (Barrett, 2017; Varela et al., 2017). Neuroimaging studies further indicate that perspective-taking involves a dynamic interplay of neural networks that are associated with emotion, attention, and self-other differentiation, both in controlled tasks and in naturalistic social contexts (Jääskeläinen & Kosonogov, 2023). Repeated engagement in perspective-taking is associated with shifts in attention, stress regulation, and emotional attunement (Immordino-Yang & Damasio, 2007). These embodied transformations can gradually shape a pedagogical way of being and acting. Although emerging studies suggest associations between multiple-perspective-taking and outcomes such as affective empathy, relational confidence, reduced exclusionary responses, and professional agency (Okonofua et al., 2016; Ottenheim-Vliegen et al., 2023a; Wink et al., 2021), little is known about how teachers learn to enact this competence in everyday classroom practice. Interpreting behavior more ecologically is associated with reduced stress and greater capacity for co-regulation, both physiological and emotional (Hagenauer et al., 2015; Jennings & Greenberg, 2009). These developments may enhance teachers' self-efficacy, understood as a situated belief in one's capacity to effect change within the classroom's complexity and dynamics (Bandura, 2020).

Understanding how teachers learn to take multiple perspectives requires viewing their decision-making as a dynamic system in which cognitive, emotional, relational, and contextual processes continuously interact in everyday classroom practice. To articulate how multiple-perspective-taking operates as a dynamic, regulatory, and agentic force within educational ecologies, the Pedagogical-Ecological Interaction Schema (PEIS) is presented (Figure 1). This visualization integrates the key processes that shape teachers' attributions and professional responsiveness, highlighting their dynamic interplay. It delineates six interrelated processes across three domains, including embodied cognition and interpretive frameworks (internal),

attribution and agency (interactional), and stress and self-efficacy (regulatory). Multiple-perspective-taking operates across these different domains of functioning, referring to a generative capacity that activates and connects these domains in situ.



↑ **Figure 1** Pedagogical-Ecological Interaction Schema (PEIS): Enacting Teacher Agency through multiple-perspective-taking in Dynamic Educational Ecologies. For a detailed breakdown of the components and developmental trajectories, see Appendix A.

As Florian (2014) stated, inclusive education requires not only recognizing diversity but also re-imagining the conditions under which participation becomes possible. From this perspective, PEIS informed the co-design of the learning program by foregrounding the conditions that enable teachers to sustain interpretive openness in complex classroom situations.

The PEIS served as a conceptual heuristic informing both the design of the professional learning program and the analytic focus of the study, foregrounding key interpretive, relational, and regulatory processes in teachers' decision-making under conditions of stress and uncertainty.

Taken together, these considerations point to the need to better understand how teachers broaden their interpretive frameworks through engagement in multiple-perspective-taking within a learning program: (1) How do teachers articulate their learning experiences related to multiple-perspective-taking in their professional practice, and (2) how do teachers experience shifts in interpreting and responding to disruptive behavior in their professional practice?

Method

To explore how teachers engage with multiple-perspective-taking as an epistemic competence within a learning program, this study was situated within a design-based research (DBR) trajectory. Within this trajectory, a theory-informed learning program was developed and enacted in practice; teachers’ post-program reflections were analyzed to examine how they experienced and interpreted their learning process.

The development of the learning program was guided by the four-phase DBR model proposed by McKenney and Reeves (2018) (see Table 1).

Design Phase	Focus	Role in broader DBR trajectory
1. Analysis & Exploration	Identifying the problem and foundations	Research review; design team collaboration; stakeholder dialogue (teachers, school-based professionals, principals)
2. Design & Construction	Developing: learning program	Co-development (researchers, practitioners, school-based professionals, teacher educators, program facilitators); iterative design of structure and content
3. Evaluation & Reflection (2020-2021)	Testing and refining the design	Stakeholder feedback and iterative refinement
4. Implementation & Theorization (2021-2022)	Enactment and theory building	Analytical focus of the present study: exploration of teachers' experiences and theorizing from enactment

↑ **Table 1** An overview of the broader DBR trajectory.

In addressing the research questions, this study examines teachers’ reflective accounts of learning through an analysis of post-program reflections. The analysis is explicitly positioned in the implementation and theorization phase (phase 4) of the design-based research trajectory and focuses on theorizing from enactment by exploring how teachers articulate their learning and shifts in interpreting and responding to disruptive behavior in practice.

The study forms part of a broader research program on teachers’ handling of disruptive student behavior (Ottenheim-Vliegen et al., 2023a, 2023b).

The Enacted Learning Program

The learning program was co-designed through collaboration between researchers and educational practitioners with expertise in pedagogy, behavioral guidance, and systemic process work. This collaborative process was informed by a whole-system-in-the-room orientation (Weisbord & Janoff, 2010), ensuring that multiple professional perspectives were simultaneously present in translating theoretical concepts into context-sensitive learning activities.

CLIMB© (Collaborative Learning for Interacting through Multiple-perspective-taking Building) emerged from this process as a theoretically articulated learning framework that structured how teachers engaged with and reflected on disruptive classroom behavior as an object of interpretation and pedagogical judgment.

Learning to take multiple perspectives was conceptualized within this design as a developmental and epistemic process, requiring sustained reflection, relational attunement, and cognitive flexibility. Drawing on work on professional learning and perspective-taking (Gehlbach, 2017; Hargreaves & Fullan, 2012; Kennedy, 2016), this learning was understood as involving the reframing of habitual assumptions and the cultivation of epistemic openness: an explorative disposition to question and test one's own interpretive stance and the frames shaping pedagogical perception (Biesta, 2013; Mezirow, 2000; Varela et al., 2017).

Within this design, learning was approached as a form of subjectification or triple-loop learning, in which teachers not only reconsider actions or underlying assumptions, but also examine the purposes, values, and professional identities informing their pedagogical judgments (Argyris & Schön, 1978; Zembylas & Schutz, 2016). Rather than prescribing preferred responses, the learning activities were structured as inquiry into concrete classroom situations, embedding emotional engagement and reflection within practice-based exploration (Kennedy, 2016; Timperley et al., 2007).

As a professional stance, multiple-perspective-taking functioned both as the object and the mode of learning. It was articulated as an explorative and responsive orientation toward classroom interaction, characterized by openness to alternative interpretations, deliberate hypothesis testing, and relational attunement in judgment and action (Biesta, 2020; Wink et al., 2021).

CLIMB© was designed to operationalize epistemic and embodied learning by structuring activities that foregrounded teachers' interpretive engagement with disruptive classroom behavior. Exercises, reflections, and assignments positioned

teachers as active interpreters of practice, engaging in the situated development of multiple-perspective-taking through inquiry into concrete classroom situations. In doing so, learning activities explicitly addressed how teachers' attributions are shaped by their own learning histories and interpretive repertoires, and how teachers, through their interactions, actively co-constitute the very situations they seek to understand. Rather than transmitting prescribed responses, learning activities were organized around questioning habitual interpretations, experimenting with alternative perspectives, and examining what specific situations might require in pedagogical judgment and action.

Central to this design was the enactment of divergent and mereological reasoning as epistemic orientations within teachers' interpretive work. These forms of reasoning were embedded across learning activities to support recognition of agency in both self and others, and to orient teachers toward intentional, ethically attuned pedagogical judgment within complex classroom contexts.

In this way, the learning program articulated and enacted the core premise of the PEIS: that pedagogical agency emerges through embodied and relational engagement within context, and becomes visible when teachers recognize their own participation in the dynamic systems they seek to understand. Rather than positioning agency as an individual capacity, the design foregrounded how agency is enacted in interaction, shaped by interpretation, affective regulation, and contextual responsiveness.

The program was therefore designed to support divergent interpretation through multiple-perspective-taking by surfacing tacit assumptions and interpretive blind spots, and deepening teachers' awareness of how their own histories, emotions, and actions contribute to classroom dynamics. Through structured reflection and inquiry into lived situations, learning activities created conditions for shifts in interpretation, attribution, and pedagogical judgment in action.

These epistemic orientations informed the pedagogical architecture of the learning program, which was organized around three interrelated design components. First, learning was guided by pedagogical principles that emphasized collaborative, practice-based inquiry and critical reflection, challenging habitual interpretations without prescribing preferred responses (Hargreaves & Fullan, 2012; Kelchtermans, 2009; Kennedy, 2016).

Second, a blended and activating didactic structure supported sustained engagement over time, combining asynchronous online work, peer dialogue, and in-

person sessions within iterative inquiry cycles that enabled experimentation and contextual transfer (Baeten, 2011; Dickenson et al., 2010).

Third, theoretical perspectives were woven into practice-based activities rather than presented abstractly, drawing on presence-based pedagogy (Baart, 2011), eco-systemic thinking (Bronfenbrenner & Morris, 2007), systemic analysis (Roevens, 2008; Scharmer, 2018), and dialogical hypothesis testing in social perspective-taking (Eyal et al., 2018; Gehlbach et al., 2012).

Instead of passively receiving theory, participants enacted these core ideas in practice by interpreting classroom situations from grounded perspectives, reflecting on their own assumptions, and experimenting with alternative responses. Within this enactment context, agency was not assumed but emerged through shared inquiry and contextual dialogue, aligning with an enactment-based understanding of professional agency (Biesta & Tedder, 2007; Edwards, 2010).

Within the enactment context of CLIMB©, facilitators functioned as relational and epistemic guides, modeling multiple-perspective-taking in interaction, supporting reflective inquiry, and translating theoretical concepts into pedagogical practice within a dialogical learning space (Bergmark, 2023; Jansen, 2002; Thurlings & den Brok, 2018). The program was co-facilitated to support dialogic attunement and to sustain conditions in which multiple perspectives could be explored without premature closure.

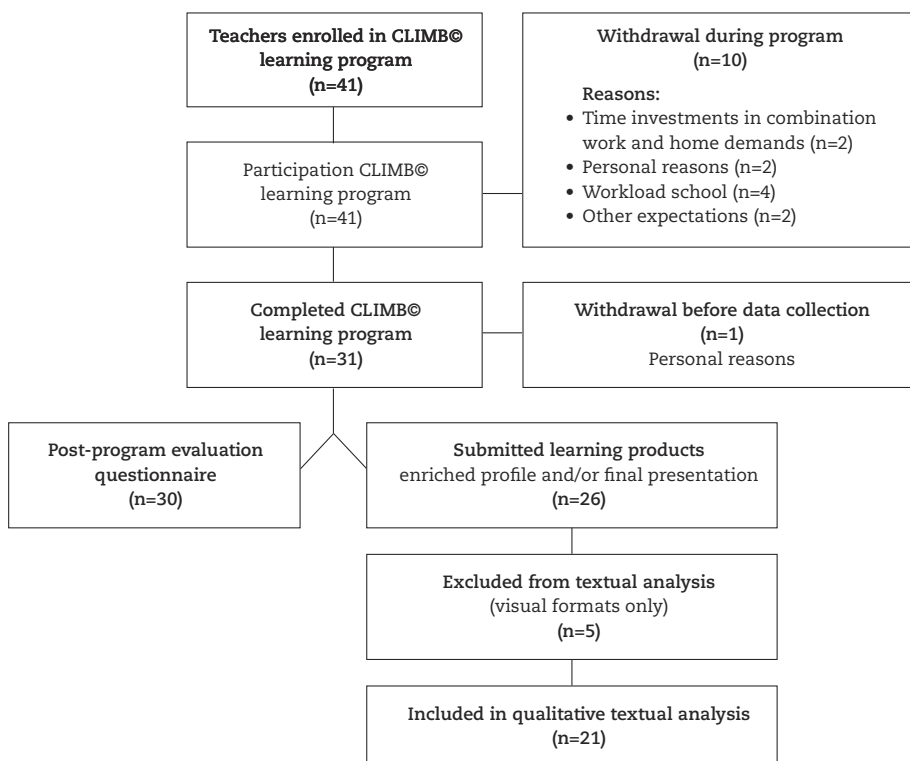
To illustrate how theoretical orientations and learning activities were brought together within the CLIMB© trajectory, Table 2 provides an overview of the program's structure and key enactment elements. Rather than depicting a fixed instructional sequence, the table shows how inquiry, theory, and relational practice were interwoven to constitute the learning context in which teachers' interpretive work and professional judgment were enacted and reflected upon (Zembylas & Schutz, 2016).

Lead time	start	Term 5-6 weeks	1. Meeting week 5/6	Term 5-6 weeks	2. Meeting week 10/11	Term 5-6 weeks	3. Meeting week 10/11	Term 5-6 weeks	4. Meeting week 20/21	Term 5-6 weeks	5. Meeting week 25/26
Estimated time investment Total: 56-60 hours	2 hours	7 hours	4 hours	7 hours	4 hours	7 hours	4 hours	7 hours	4 hours	7 hours	4 hours
Program focus	Why, how, what of the learning program	The perspective of the teacher and the whole situation		Perspective-taking & voice student and the whole situation		Perspective-taking & voice parents/care-takers - social network and the whole situation		Perspective-taking & voice class - school and the whole situation		Presentations of one's learning process with reflections on what is learned	
Blended	Start meeting	5 Terms 5-6 weeks: learning by doing + virtual learning interaction					Five physical four-hour meetings				
Learning activity	- Onboarding: participants/program/learning community - Formulating learning questions - The online learning community gives a complete overview of the program	- Creating learning products based on one's learning questions in practice with the program subjects. It explores, practices, and experiments with content. - Placing a learning product is one's portfolio in the learning community - Virtual learning interaction about each other's products					- Reflection on what is learned and the learning interaction - Deepening the reflection/learning with subject matter - Introduction to a new subject with discovery and exercises				

↑ **Table 2** Overview of the program's key components and structure.

Participants

The study included 30 qualified primary school teachers (one male, 29 female) from 20 schools across nine school boards in the northern Netherlands (Figure 2). Participation was voluntary; teachers attended an information meeting about the learning program to make an informed decision about participation. They registered individually, without institutional incentives or assignment. To avoid dominance of within-school perspectives and to support psychological safety within learning groups, a maximum of four teachers per school was allowed, informed by earlier design iterations in which larger within-school clusters influenced group dynamics. All participants provided informed consent prior to participation. Teachers' ages ranged from 27 to 57 years ($M = 42$, $SD = 8.69$, median = 41), and teaching experience ranged from 1 to 35 years ($M = 15$, $SD = 8.7$, median = 15).



↑ **Figure 2** Flowchart of participation in the learning program and post-program data collection

Program Implementation

Following an initial pilot cycle in which the learning design was explored and refined in collaboration with teachers, CLIMB© facilitators, and school leaders, the finalized program was delivered over a seven-month period. The trajectory began with an introductory group session focused on community building and familiarization with the learning environment, followed by five in-person group sessions (four hours each), interwoven with asynchronous learning activities on a secure digital platform.

Across the trajectory, participants engaged in iterative cycles of reflection, peer dialogue, and application within and between group sessions. Teachers worked on personalized learning questions, documented experiences in individual portfolios, and exchanged feedback within the learning community. These activities constituted the enactment context in which multiple-perspective-taking was practiced and reflected upon as an embodied and situated competence.

Participants were organized into three learning communities of comparable size. Allocation to groups was based on availability rather than participant characteristics, to support practical feasibility while avoiding systematic clustering. Each learning community was co-facilitated by two CLIMB© facilitators to support dialogic attunement and continuity across sessions. Between meetings, participants interacted through the closed online platform, extending inquiry and reflection beyond face-to-face encounters.

To support enactment fidelity, the researcher-designer and the six facilitators engaged in structured pre- and inter-session reflection meetings. These moments of collaborative inquiry supported ongoing alignment between pedagogical intentions, facilitation practices, and enactment across groups, and were essential for maintaining coherence of the program and the credibility of the empirical material.

Data Sources and Materials

To address the research questions concerning how teachers describe their learning experiences when engaging with multiple-perspective-taking, and how they experience shifts in interpreting and responding to disruptive behavior, two complementary post-program data sources were used: (1) a program evaluation questionnaire capturing teachers' appreciation and perceived relevance of the learning program, and (2) participants' learning products, which provided rich qualitative material on teachers' experienced development in interpretive, regulatory, and action-oriented processes. Within design-based-research both program appreciation and reflective learning artifacts are considered important sources for understanding the feasibility, resonance, and appropriation of an educational design (Kirkpatrick, 1994; McKenney & Reeves, 2018).

Data were collected after completion of the learning program within an NRO-funded research project (project number 40.5.19630.067), with Oberon BV (Utrecht, The Netherlands) acting as the grant-holding research partner and responsible for data management and secure storage. All data were pseudonymized prior to analysis. The study was conducted within the doctoral research framework of Radboud University and under the oversight structures of the NRO-funded project. Research procedures adhered to the guidelines of the Donders Institute for Brain, Cognition and Behaviour and the principles of the Declaration of Helsinki.

Post-program evaluation questionnaire: program appreciation and perceived relevance

Following completion of the CLIMB© program, all participating teachers completed a brief evaluation questionnaire designed to capture their appreciation of the program and the perceived relevance of its components. The questionnaire

consisted of six items rated on a five-point Likert scale, ranging from *not at all* (1) to *a lot* (5). Items addressed teachers' experienced usefulness of the program, including their appreciation of the learning activities, peer dialogue, and perceived support in broadening the perspectives on disruptive behavior.

This evaluation served a formative and descriptive purpose, providing insight into whether and how the program resonated with participants.

Participants' learning products: qualitative exploration of experienced learning

To gain deeper insight into how teachers described their learning processes and experienced shifts in interpretation and practice, participants' learning products were used as primary qualitative data sources. These consisted of two artifacts submitted for the final program session: (1) an enriched version of each teacher's "unique teacher profile" and (2) a final presentation shared with peers during the closing session.

The enriched teacher profile was built on a version completed prior to the first program session and was uploaded to each participant's online portfolio. In the initial profile, teachers reflected on:

1. their ideal image of themselves as a teacher;
2. their preferred responses to challenging behavior;
3. the extent to which they succeeded in incorporating this ideal; and
4. how at least three students and colleagues perceived them as a teacher or colleague.

For the final meeting, teachers revisited and expanded these reflections by addressing the following guiding questions:

1. What did you learn through the program?
2. What has changed in how you view your students and their behavior?
3. What does multiple-perspective-taking mean to you?
4. How did you start to apply this in your work?
5. What did you start doing differently?
6. How has this influenced your work?
7. What would you still like to develop?

Using the same guiding questions, participants then created a final presentation, choosing their own format and emphasis. Both written profiles and stored presentations were used as primary materials for qualitative analysis.

Data analysis

Participants' learning products were subjected to thematic analysis (Braun & Clarke, 2006) to identify patterns in experienced learning, shifts in interpretive stance, and the application of multiple-perspective-taking. Units of analysis included complete responses to the seven guiding questions in the enriched profiles and the content of the final presentations. In total, 26 participants submitted an enriched profile; of these, 21 contained textual statements suitable for qualitative analysis, while others primarily used visualizations to express their learning.

Texts were exported to Excel for coding, followed by clustering of related codes and selective synthesis. Analyst triangulation was applied: one researcher conducted the initial coding, and a second researcher independently reviewed an initial subset of coded data to refine the codebook, with disagreements resolved through negotiated consensus. The full research team, comprising the researcher–designer, teacher-researcher, and two independent researchers, contributed to peer debriefing, theme validation, and iterative alignment with the study's theoretical framework. This collaborative approach strengthened interpretive coherence and analytical rigor.

Excel was selected because of the modest corpus size and the team's preference for transparent, auditable matrices. Illustrative quotations are labelled by teacher ID (e.g., T3), and simple prevalence counts ($n = 21$) are reported for major subthemes to support analytic transparency.

Thematic analysis was conducted using a theoretically informed analytic lens. Drawing on the PEIS introduced in the conceptual framework, three sensitizing concepts guided the analysis: interpretive frameworks, enacted agency, and relational dynamics. Within these conceptual domains, codes were developed iteratively to capture teachers' descriptions of learning and practice:

1. Shifts in interpretive frameworks: teachers' sense-making of disruptive behavior.
 2. Shifts in enacted agency: professional actions and pedagogical choices.
 3. Shifts in relational dynamics: relational interactions with students and parents.
- As these domains are interrelated, some statements were coded across multiple domains.

Descriptive statistics were calculated for the post-program evaluation questionnaire. All 30 participating teachers completed the questionnaire; for the closed-ended Likert-scale items (1–5), item-level means and standard deviations were computed. Responses to the open-ended questions were analyzed qualitatively using the same thematic approach as the learning products.

Results

This section presents findings from two post-program data sources. First, descriptive findings from the post-program evaluation questionnaire ($n = 30$) report teachers' appreciation of and perceived relevance of the CLIMB® professional learning program. Subsequently, qualitative findings from thematic analysis of participants' learning products ($n = 21$) are presented, capturing teachers' descriptions of shifts in interpretive frameworks, enacted agency, and relational dynamics. Together, these findings reflect teachers' experiences of learning within the program.

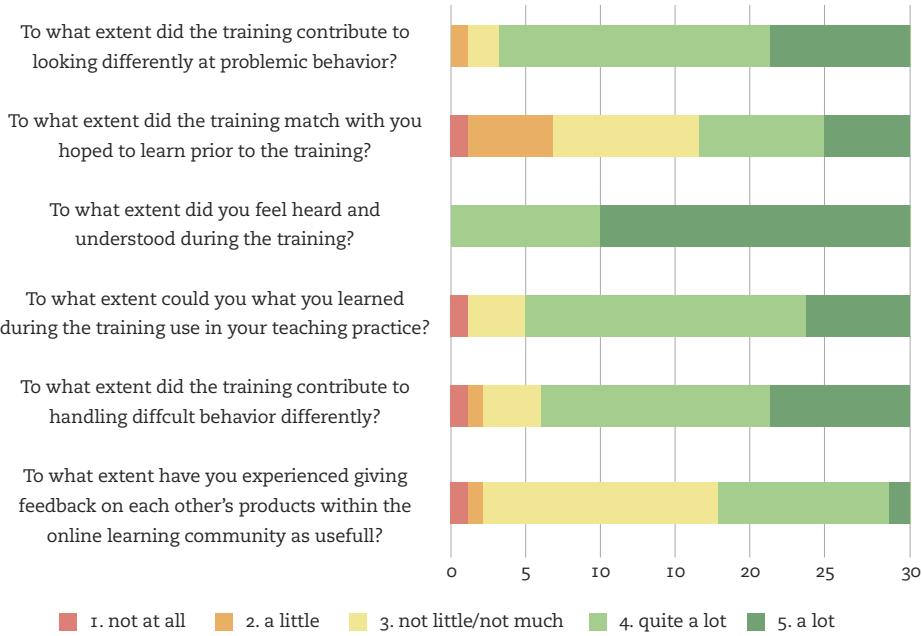
Post-Program Evaluation Questionnaire: Program Appreciation and Perceived Relevance

Overall, responses clustered toward the higher end of the scale, suggesting high appreciation of the program and perceived relevance of its components (Figure 3). All participants indicated that they felt understood and supported by the facilitators. Most teachers reported that the program helped them broaden their perspective on students' situations and classroom behavior.

Responses to the open-ended questions revealed variation in the experience of specific program components. Teachers particularly valued the in-session exercises, dialogical exchange, and the visualization of the pedagogical ecosystem. Several participants indicated that peer dialogue during face-to-face meetings was experienced as more meaningful than feedback within the online learning environment.

Approximately 60% of participants reported that providing feedback in the digital learning community was less valuable. The most frequently mentioned reason was limited time due to workload at school, which made asynchronous feedback on peers' learning products less feasible. Participants explained that discussing cases and experiences during program meetings felt more accessible and impactful than online interaction.

A minority of participants ($n = 6$) indicated that the program differed from their initial expectations. These teachers had anticipated more concrete tools or step-by-step strategies for addressing disruptive behavior. Suggestions for improvement included clearer communication about the purpose of the online learning environment, more explicit discussion of preparatory assignments during meetings, and clearer framing of the program's pedagogical approach in advance. Several participants expressed interest in follow-up learning opportunities.



↑ Figure 3 Teachers' evaluation of the program (N=30).

Participants' Learning Products: Qualitative Exploration of Experienced Learning

This section presents a qualitative exploration of teachers' experienced learning based on participants' learning products. In total, 26 teachers submitted an enriched professional profile and/or final presentation. Of these, 21 contained textual material suitable for qualitative analysis. Across these materials, 203 coded units were identified and analyzed thematically.

The analysis focused on three interrelated domains: (1) shifts in interpretive frameworks, (2) shifts in enacted agency, and (3) shifts in relational dynamics. In these analyses, *shifts* refer to teachers' descriptions of changes in interpretation, professional action, and relational positioning.

Shifts in Interpretive Frameworks. All 21 participants contributed to this domain, which accounted for 64% of all coded statements. It captures changes in how they perceived, reflected on, and interpreted student behavior. Teachers described experiencing a broader interpretive framework, marked by greater awareness of personal assumptions, systemic influences, and attributional complexity. Many described increased resilience and a shift from reactive responses toward reflective

inquiry. "I have learned to accept feelings and situations, to give myself time to learn to deal with them, and to leave emotions with the other person." (T3)

Participants also became more conscious of how their histories and mental models influenced their interpretations: "I have learned that my assumptions, dreams, history, and wishes determine how I respond to a child, and that determines how a child responds to me." (T11).

Importantly, many began to situate behavior within broader systemic and ecological contexts: "My biggest learning gain is looking beyond the student, yourself, and the interaction. Viewing the entire system and the student's place in the different environments... This has enormously changed how I look at a student with remarkable behavior." (T8)

Shifts in Enacted Agency. Seventeen of the 21 teachers contributed to this domain, which accounted for 31% of all coded statements. This domain includes teachers' descriptions of changes in their professional actions and reported strategies. Many described a broadened professional repertoire, including the use of dialogue and co-construction to engage students:

"I talk to the student and ask him: 'What do you need?'" (T9)

Assignments such as the student profile exercise encouraged teachers to adopt a more empathic, student-centred perspective:

"By creating with the student the student's profile on one page, I was forced to look at more than just the student's behavior... He appreciated that I took the time for him." (T20)

Teachers also reported changes in preparing for and conducting parent meetings, reflecting a more curious, open, and dialogical stance:

"I had a very nice and open conversation through the sample questions... Parents and I had a good feeling at the end." (T20)

Some noted that their new approach to observing and questioning also helped them support colleagues:

"The program made me use my senses more often: what do I see, what do I hear, what do I feel, and what questions come to mind... This has already resulted in me being able to help a colleague." (T21)

Shifts in Relational Dynamics. Nine of 21 teachers contributed to this domain, which accounted for 5% of all coded statements. Reflections here described strengthened relational connections and increased trust, particularly with students previously labeled as 'difficult': "I notice that I am getting closer to the children... Being aware of your actions is very important." (T12)

Improved teacher–parent relations were also noted:

“I received compliments about the contact with a student from parents during the last parent meeting.” (T4)

Synthesis

Taken together, the findings provide insight into how teachers experienced participation in a learning program oriented toward multiple-perspective-taking as an epistemic competence. Across three interrelated domains (interpretive frameworks, enacted agency, and relational dynamics), participants described broader ways of seeing, acting, and relating in response to disruptive behavior. At the same time, participants’ reflections also revealed variation in how different components of the program were experienced, particularly regarding the asynchronous online learning activities.

Teachers reported shifts in how they made sense of classroom situations, how they positioned themselves in interaction with students, parents, and colleagues, and how they attended to relational dynamics within their pedagogical context. The nature and depth of these described shifts varied across participants, reflecting the subjective and context-dependent character of professional learning.

These qualitative descriptions were accompanied by high overall appreciation of the program, as reflected in the post-program evaluation questionnaire, including perceived relevance for teachers’ professional perspectives and practice, despite initial expectations of a more tool-oriented approach.

Discussion

This design-based study explored teachers’ experiences of a professional learning program designed to engage them in multiple-perspective-taking as an epistemic, relational, and embodied competence for addressing disruptive classroom behavior. Drawing on teachers’ written reflections and final presentations, participants described shifts in interpretive frameworks, enacted agency, and relational dynamics. The nature and depth of these shifts varied across participants; however, many reported moving from reactive or deficit-oriented framings towards a more nuanced, dialogical stance, suggesting that a situated and reflective learning environment may create conditions for context-sensitive professional agency.

Although the program’s aims and approach were introduced beforehand, many teachers expected tools and outlined behavioral strategies. Such expectations are not unusual: prior research shows that professional development often emphasizes

single theoretical models, classroom management techniques, or step-by-step interventions (Kennedy, 2016; Opfer & Pedder, 2011), reflecting a learning culture that may privilege instrumental over interpretive or identity-oriented growth. In contrast, the program's focus on understanding behavior in situ, through embodied exercises, systemic visualizations, and dialogical exploration, was experienced as professionally meaningful because it linked reflection directly to lived classroom realities. This pattern aligns with transformative learning theory (Mezirow, 2000) and presence-based pedagogy (Baart, 2011), both of which emphasize shifts in professional orientation rather than procedural mastery. It also resonates with work on teachers' professional identities, which highlights the importance of engaging with the moral, relational, and contextual complexity of pedagogical practice, rather than reducing teaching to technical solutions (Beauchamp & Thomas, 2009; Biesta, 2013, 2020; Kelchtermans, 2009).

This inquiry-oriented learning process, through which teachers enacted interpretive and divergent forms of reasoning, shaped how participants engaged with different components of the program. Although the online platform was designed to foster written multiple-perspective-taking and system-oriented reflection, participants experienced it as less conducive to learning than the in-person sessions. While the asynchronous environment offered structured assignments, peer feedback opportunities, and facilitator moderation aligned with the program's interpretive aims, engagement remained limited. Teachers referred to time constraints, unfamiliarity with asynchronous formats, and a preference for real-time interaction and dialogue. Viewed through a pedagogical-ecological lens, this divergence underscores that interpretive development and professional agency are activated not by pedagogical intent alone, but by the relational and contextual affordances through which learning is enacted (Biesta, 2013; Varela et al., 2017).

Importantly, this finding should not be interpreted as a rejection of written reflection. Rather, it highlights a broader tension in teaching and learning. Written reflection remains a vital yet structurally underdeveloped dimension of professional practice (Gelfuso & Dennis, 2014; Koskela & Lanas, 2016). In everyday work, teachers routinely write—providing feedback, communicating with parents, and documenting observations—yet such texts often foreground deficits, lack contextual nuance, and rarely integrate multiple perspectives (Koskela & Lanas, 2016; Ottenheim-Vliegen et al., 2025a; Ysseldyke et al., 1983). Engaging in written perspective-taking requires slowing down, surfacing tacit assumptions, and adopting an exploratory epistemic stance within complexity (Eyal et al., 2018; Gehlbach, 2017). Supporting teachers in this form of reflection, therefore, requires explicit

scaffolding and collective conditions that legitimize the uncertainty and depth inherent in this work (Gelfuso & Dennis, 2014). The present findings thus point to a design tension: while written reflection holds substantial developmental potential, its enactment depends on emotional safety, shared interpretive practices, and collective validation.

Participants described greater awareness of their interpretive assumptions, attributional patterns, and the broader systemic context of student behavior. These shifts reflect the cultivation of epistemic reflexivity and align with research on social perspective-taking and attributional awareness (Eyal et al., 2018; Gehlbach et al., 2012; Wang et al., 2024).

Teachers described becoming less reliant on pre-formulated behavioral strategies and more responsive to relational dynamics and contextual nuance in their daily practice. This shift from reactive management towards dialogical attunement echoes Baart's (2011) presence-based pedagogy and signals the emergence of more situated, enactive forms of agency. In reframing behavioral challenges as invitations to understand difference and complexity, teachers engaged in divergent reasoning that recognizes multiple interacting attributions, an orientation that is consistent with inclusive pedagogy (Florian & Black-Hawkins, 2011). These developments highlight the value of expanding interpretive repertoires as a foundation for ethically responsive, context-sensitive practice in diverse classrooms.

Perceived strengthening of relationships with students and parents reflected a movement away from control-oriented or behavioral interventions towards trust, recognition, and attunement. In Biesta's (2013, 2020) terms, this reflects subjectification: meeting the student as a singular subject rather than as an object of intervention. In this view, multiple-perspective-taking is not merely a cognitive strategy, but an integral aspect of dialogical and ethically responsive professional identity. The findings suggest that as teachers became more attuned to the affective, social, and systemic dimensions of students' experiences, their professional orientation shifted accordingly. This relational responsiveness aligns with inclusive pedagogies that emphasize recognition, presence, and mutual trust in complex educational environments (Baart, 2011; Florian & Black-Hawkins, 2011; Scharmer, 2009). It marks a movement away from instrumental approaches towards a more embodied and situated enactment of agency.

The three analytic domains identified in this study correspond with core elements of PEIS, illustrating how shifts in interpretation, agency, and relational positioning may unfold within teachers' pedagogical ecologies.

Limitations and implications

This study explored teachers' experiences with a design-based learning program, focusing on multiple-perspective-taking as an epistemic competence. The purpose was to understand how the program's pedagogical design was received in practice and how it was experienced in relation to changes in professional understanding and response. Consistent with its design-based orientation, the study sought not to measure direct effects in the classroom, but rather to examine how participants engaged with the learning architecture and how they described reflective and interpretive growth. Within this interpretive framework, self-reported data were essential for capturing how participants experienced the design and the meaning they attributed to their professional learning.

The findings are grounded in teachers' written reflections and final learning products. While these data are inevitably subjective, such subjectivity constitutes an integral part of the phenomenon under study: teachers' lived sense-making within situated, dialogical professional learning. The limitation, therefore, lies not in the subjective nature of the material itself, but in the absence of triangulation through additional perspectives—such as observations, student feedback, or longitudinal follow-up—that could further substantiate the reported interpretive shifts.

Participation in the program was voluntary and may have attracted teachers with a pre-existing interest in reflection or professional growth. This self-selection may have influenced the nature of reported learning experiences. However, the fact that many participants initially expected concrete behavioral tools rather than reflective exploration suggests that the design also engaged teachers with more instrumental orientations, indicating a broader relevance across professional profiles.

Finally, this study represents the first empirical application of PEIS, both as a conceptual foundation for the program's design and as an interpretive framework for analysis. It supports the translation of theoretical principles into pedagogical design features and subsequently informs the interpretation of how teachers describe shifts in their meaning-making across interpretive frameworks (including interpretations of behavior and attributions), enacted agency, and relationships with students and parents.

Future research should build on this work by examining how interpretive development unfolds over time within teachers' everyday pedagogical ecologies. Longitudinal and multi-site design-based studies could explore how shifts in interpretation, regulation, and relational positioning are sustained, adapted, or

constrained across changing classroom contexts. Integrating additional perspectives—such as classroom observations or dialogical accounts from students and colleagues—may further illuminate how interpretive agency is enacted within complex educational systems.

Conclusion

This design-based study suggests that reflective, situated professional learning may shift how teachers interpret, relate to, and act upon disruptive behavior. Attending to teachers' lived experiences appears to offer insight into how pedagogical judgment develops through divergent interpretation, dialogical reflection, and relational engagement.

Multiple-perspective-taking, as conceptualized in this study, may not be merely a skill but rather a developmental and epistemic stance that reshapes teachers' pedagogical reasoning and relationships. When embedded in a supportive, inquiry-driven context, multiple-perspective-taking may enable teachers to suspend automatic attributions, recognize systemic dynamics, and navigate tensions with greater responsiveness. These processes were reflected in teachers' reported shifts in interpretation, enacted agency, and relational positioning.

Moving beyond control- and compliance-oriented approaches, the program may include design elements associated with interpretive agency, enabling teachers to reframe behavior, reconsider their role, and build trust-based connections with students and parents. These shifts potentially carry important implications for inclusive pedagogy and for the cultivation of epistemic practices that embrace uncertainty, perspective-shifting, and mutual recognition. This aligns with Avalos' (2011) synthesis, which emphasizes that teachers' learning must address the inherent complexity of teaching through context-sensitive and socially grounded learning.

Within this study, PEIS served as a conceptual frame linking teachers' interpretations to the ecological dynamics of classroom life. Future studies should examine its utility by investigating how shifts in interpretive frameworks translate into sustained pedagogical change across diverse educational contexts. Inclusive teaching begins with the assumption that all learners belong, and that it is the teacher's ongoing responsibility to adapt practice meaningfully (Florian & Black-Hawkins, 2011). Supporting this work requires more than the provision of tools; it calls for professional development that cultivates reflexivity, relational depth, and pedagogical courage through engagement with complexity, where the potential for sustained, context-sensitive growth resides.

Appendix A

Matrix of the Pedagogical–Ecological Interaction Schema (PEIS)

The PEIS matrix explicates the conceptual relations underlying the Pedagogical–Ecological Interaction Schema as used in the design and interpretation of this study; it served as a conceptual guide.

Legend Visualization PEIS (Figure 1):

The arrows in the PEIS illustrate recursive, reciprocal dynamics across ecological layers. Solid arrows represent direct influence; dashed arrows indicate modulatory effects (e.g., regulation shaping interpretation); double-headed arrows show mutual shaping (e.g., between embodied cognition and interpretive framework). Semi-transparent zones reflect the permeability of ecological layers, underscoring that professional agency is co-constructed — never isolated but shaped through layered, relational, and contextual interactions.

The matrix below outlines the core ecological layers represented in the visualization, key developmental elements, and interactional dynamics. It shows how multiple-perspective-taking enables developmental movement from reactive or fragmented sense-making toward attuned, context-sensitive, and agentic professionalism. These shifts are non-linear and context-dependent, not prescriptive stages.

Ecological Layer	Key Elements	Interactional Dynamics	Developmental Movement through multiple-perspective-taking
Student	Developing subject within the pedagogical ecosystem	Student behavior acts as a trigger and co-constructor in meaning-making	Recognizing students as relational co-constructors of pedagogical meaning
Internal Ecology: Embodied Cognition	Sensory, affective, and neurocognitive filters shaping perception	Filters perception; modulated through relational safety and experience	Toward embodied, context-sensitive attunement beyond automatic reactivity
Internal Ecology: Interpretive Framework	Meaning-making patterns, norms, and assumptions	Frames and directs interpretation and pedagogical response	Toward divergent, mereological, contextualized, and relational reasoning
Regulatory Dynamics: Stress	Stress experience and regulation capacity	Alters perception and interpretation, enabling or constraining attunement	Toward regulated presence and openness for responsive interaction
Regulatory Dynamics: Self-Efficacy	Competence beliefs and discomfort tolerance	Shapes readiness for complexity and relational risk-taking	Toward grounded action and professional confidence
Interactional Ecology: Attribution	Attributional divergence, judgment, and locus of influence	Filters causal understanding; affects relational tone and action	Toward flexible, developmental, and non-moralizing interpretations
Interactional Ecology: Agency	Reflective awareness, adaptive responsiveness, intentionality	Enacted through embodied interpretation and relational engagement	Toward responsive professionalism and pedagogical authorship
Contextual Ecology: Environment	Pedagogical ecosystem: social, institutional, physical context	Co-constructs experience and opportunity structures	Toward ecological responsiveness and structural awareness

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Chapter 5

Practice-Based Evaluation of Teachers' Interpretations of Disruptive Classroom Behavior in a Multiple- Perspective-Taking Learning Program

Under review

Astrid Ottenheim-Vliegen, Marion van Hattum, Hanna Swaab, and Wouter Staal

Abstract

Learning environments are shaped by how teachers interpret and respond to student behavior. When disruptive behavior is predominantly appraised as student-controlled, teachers may feel unable to influence it, which may lead to exclusionary practices. Such interpretations are often influenced by attribution biases and limited contextual awareness. This study examines whether teachers' interpretations of disruptive classroom behavior relate to their capacity for multiple-perspective-taking. Multiple-perspective-taking may broaden the exploration of factors explaining disruptive behavior within the interactional dynamics of a learning environment (a pedagogical ecosystem). Strengthening awareness of multiple interpretations and attribution possibilities may broaden how teachers explain disruptive behavior and increase self-efficacy.

This study presents a practice-based evaluation of a learning program designed to foster teachers' use of multiple-perspective-taking when responding to student behavior. It examines changes in teachers' perceptions of student behavior, self-efficacy, teacher-student relationships, and written reflections on student behavior.

Twenty-nine primary school teachers reported on 57 focal teacher-student dyads before and after participation in the learning program. Teachers completed questionnaires on perceived student problem behavior, self-efficacy, and teacher-student relationship. Additionally, a content analysis was conducted on teachers' student-reports.

Results showed a significant decrease in teacher-rated problem behavior and increases in prosocial behavior and self-efficacy from pre- to post-program. In contrast, perceived teacher-student relationship quality decreased. Although written reflections showed little change, teachers rated the students' behavior as less problematic. This suggests that participation in the multiple-perspective-taking learning program was associated with higher self-efficacy and more positive appraisal of disruptive behavior.

Keywords: *multiple-perspective-taking, disruptive behavior, interpretative frameworks, self-efficacy, teacher-student relationship, professional learning, classroom interaction*

Introduction

Teachers navigate hundreds of interactions with students each hour, many of them spontaneous or unpredictable (Jackson, 1990). Bijstra et al. (2020) reported that teachers encounter about three incidents and make five interventions per half-hour in response to disruptive behavior. Responding to such behavior often requires immediate pedagogical decisions. Teaching involves continuous cognitive, social, and emotional decisions about classroom interactions aimed at creating a learning environment for all students (Biesta, 2020; Welsh & Little, 2018). Decisions related to disruptive classroom behavior affect students' and teachers' emotions and engagement (Aloe et al., 2014; Mahvar et al., 2018; Richards, 2012; Spilt et al., 2011).

Teachers often experience disruptive classroom behavior as challenging (Aloe et al., 2014; Van Grinsven & Van Woud, 2016). Students displaying such behavior are more often subjected to exclusionary practices such as suspension and referral to special support (Bakker, 2015; Welsh & Little, 2018). Although relation-based strategies are considered more effective, teachers often rely on corrective or avoidant responses that may reinforce disruptive interaction patterns (Bijstra et al., 2020; Mahvar et al., 2018).

Teachers' interpretative frameworks influence their decisions and may result in attribution biases and stereotyping that may not support students' development (Okonofua et al., 2016b; Wang & Hall, 2018; Weiner, 2010; Welsh & Little, 2018). Understanding relation-based interventions is therefore important for developing supportive approaches to disruptive behavior that nurture healthy student development (Welsh & Little, 2018; Wink et al., 2021). Interpretation of such behavior is shaped by the fact that teachers operate in a complex and dynamic environment where their needs and those of their students are closely intertwined (Biesta, 2020; Frenzel et al., 2018; Wrigley, 2019).

A network perspective explains classroom interactions by recognizing that teacher and student behavior emerges from interacting biological (e.g., stress responses), psychological (e.g., perception biases), social (e.g., interactions), and environmental factors (e.g., the presence of supportive teaching aids) (Borsboom & Cramer, 2013; Bronfenbrenner & Morris, 2007; De Beurs et al., 2021; Steenbeek & Van Geert, 2013; Quintana, 2022). This ecosystem can be understood as pedagogical because the interactions within it are oriented toward supporting learning and development. Within such a pedagogical ecosystem, understanding disruptive behavior requires teachers to consider multiple interacting perspectives (Figure 1). Despite this

complexity, dominant thinking often remains linear and reductionist (Wrigley, 2019), and behavior is often viewed as student-controlled (Koskela & Lanas, 2016; Ottenheim-Vliegen et al., 2025; Ysseldyke et al., 1983). Such interpretations may undermine teachers' self-efficacy by fostering expectations of limited influence on students' behavior. Teachers' perceptual biases and self-efficacy influence judgments and attributions, which in turn shape expectations and interactional behavior (Weiner, 2010). Within classroom interaction, behavior does not operate as an isolated stimulus but becomes meaningful through teachers' interpretations, which orient subsequent responses and shape the unfolding interaction. These interpretative responses structure classroom interaction and influence students' learning opportunities.

Disruptive classroom behavior is commonly described in the literature as student behavior that interferes with classroom functioning, instruction, or peer interaction (Aloe et al., 2014; Welsh & Little, 2018). In practice, however, such behavior is identified and evaluated by teachers in everyday classroom interaction (Koskela & Lanas, 2016). In the present study, disruptive behavior is therefore approached as teacher-appraised behavior, reflecting how teachers interpret and respond to classroom situations.

Recognizing one's interpretive framework is important for understanding and overcoming attribution bias. Interpretive frameworks shape how teachers attribute student behavior, which in turn affects the educational climate and students' emotional and behavioral development (Wink et al., 2021). Teachers' beliefs, attributions, and expectations are known predictors of academic outcomes (Rubie-Davies, 2010; Turetsky et al., 2021). More specifically, teachers' attributions influence the teacher-student relationship, students' self-esteem, and learning experience (Almog & Shechtman, 2007; Bloem et al., 2023; Wang & Hall, 2018). Teachers' expectations are often shaped more by their attributions than students' actual behavior (Rubie-Davies, 2009). For example, when disruptive behavior is attributed to stable and uncontrollable student characteristics, teachers may show less sympathy and engage in less adaptive teaching behavior. In contrast, attributions that include contextual and potentially changeable influences are associated with greater willingness to adapt their teaching strategies (Wang & Hall, 2018). Teachers' attributional cues may also influence classmates' perceptions of student behavior, thereby reinforcing perception bias (Wang & Hall, 2018).

Wang & Hall (2018) confirm that attributions may be systematically biased. Studies examining teachers' attributions for disruptive student behavior have reported a

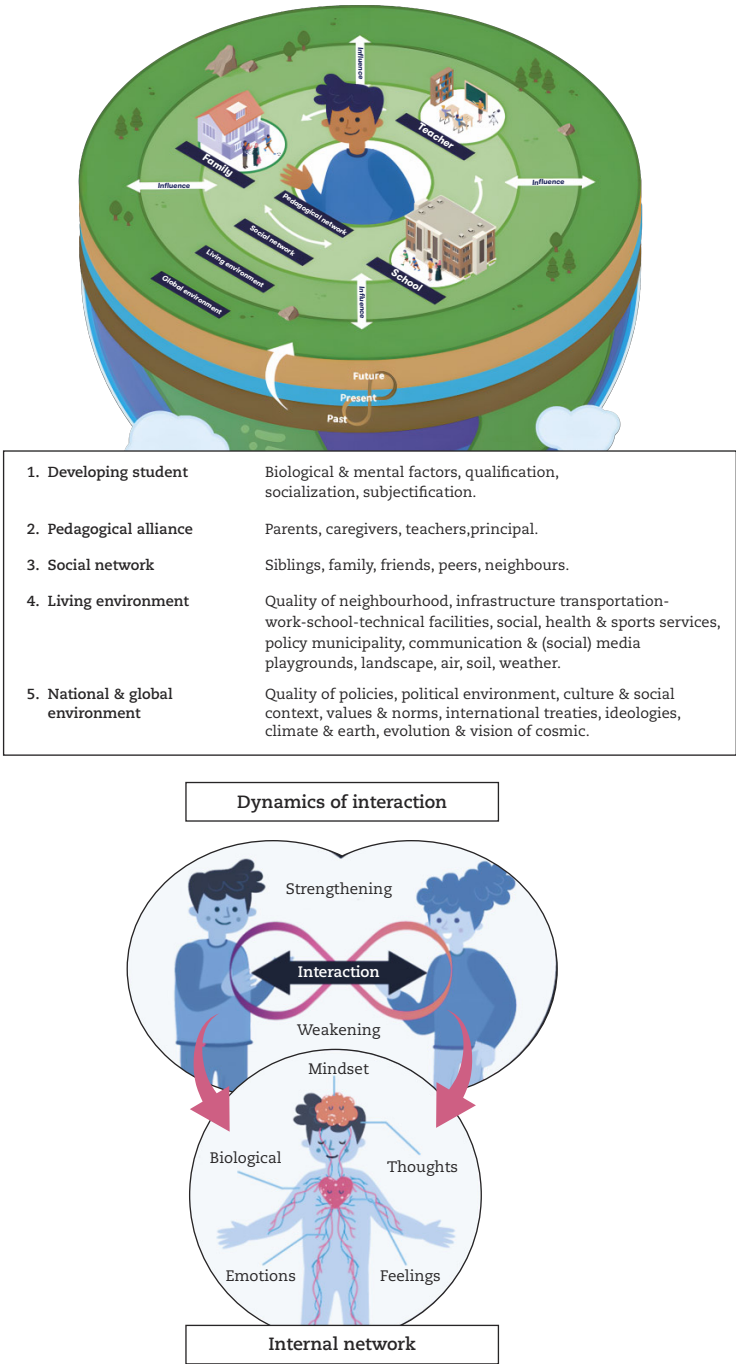
high prevalence of student-controlled attributions (Koskela & Lanas, 2016; Ottenheim-Vliegen et al., 2025; Ysseldyke et al., 1983). Without targeted professional learning, teachers may interpret behavior primarily from a self-oriented perspective, focusing on students' shortcomings and control while giving limited consideration to contextual influences within or beyond the classroom (Ottenheim-Vliegen et al., 2025). Teachers' interpretative responses to disruptive classroom behavior are thus shaped by the frameworks through which that behavior is understood. An interpretive framework refers to the constellation of beliefs, expectations, attributions, and social, cultural, and professional assumptions through which teachers perceive, evaluate, and respond to student behavior in interaction.

When teachers adopt a broader interpretive framework for understanding student behavior, this may lead to more supportive and pedagogically responsive decisions. This requires a mereological stance from teachers that considers parts and wholes within the pedagogical ecosystem. This requires awareness of internal attribution processes and openness to the interplay between student and environmental factors (Figure 1). Understanding that multiple factors contribute to disruptive behavior may encourage teachers to explore alternative hypotheses and underlying mechanisms (Bronfenbrenner & Morris, 2007). Such an approach requires tolerance for uncertainty and openness to diverging perspectives. Learning processes that cultivate multiple-perspective-taking should develop sensitivity to the dynamics of student behavior and create a non-judgmental learning environment (Hyun & Marshall, 1997; Ottenheim-Vliegen et al., 2023).

Multiple-perspective-taking appears important for creating a congruent pedagogical environment for diverse learners (Hyun & Marshall, 1997). From an ecosystem perspective, multiple-perspective-taking is required, as single or dyadic perspective-taking seems insufficient for understanding complex classroom interactions. However, studies on the relationship between perspective-taking and disruptive classroom behavior are scarce (Ottenheim-Vliegen et al., 2023). Multiple-perspective-taking may foster a more supportive orientation toward the student, improving understanding of disruptive behavior and reinforcing a relationship-based pedagogy (Okonofua et al., 2016a; Wink et al., 2021) that possibly helps to overcome attributional barriers (McKnight, 2017).

In addition to interpretative processes and attributions, teachers' self-efficacy is important because it supports pedagogical decision-making (Woodcock & Faith, 2021) and may strengthen teachers' commitment to students displaying disruptive behavior (MacFarlane & Woolfson, 2013). Self-efficacy strongly predicts learning

The multiple interactional dynamics of a pedagogical ecosystem
Interactions can strengthen or weaken the pedagogical ecosystem for the developing student



↑ **Figure 1.** The pedagogical ecosystem encompasses multiple interacting levels, including the developing child, the pedagogical alliance, the social network, the living environment, and broader national and global contexts, as well as individual interactions and mental and bodily representations.

environments (Bandura, 1993; Hattie, 2023). It is therefore important to gain further insight into whether multiple-perspective-taking can support teachers in broadening their interpretive frameworks.

To address this, a teacher learning program aimed at cultivating multiple-perspective-taking was developed: CLIMB (Collaborative Learning in Multiple-Perspective-Taking Building; Dutch program WegWijsinGedrag). The study examines how participation in CLIMB relates to changes in (1) teachers' perceptions of student behavior, (2) teachers' perceptions of the teacher-student relationship, (3) teachers' self-efficacy, and (4) teachers' application of multiple-perspective-taking and attributions.

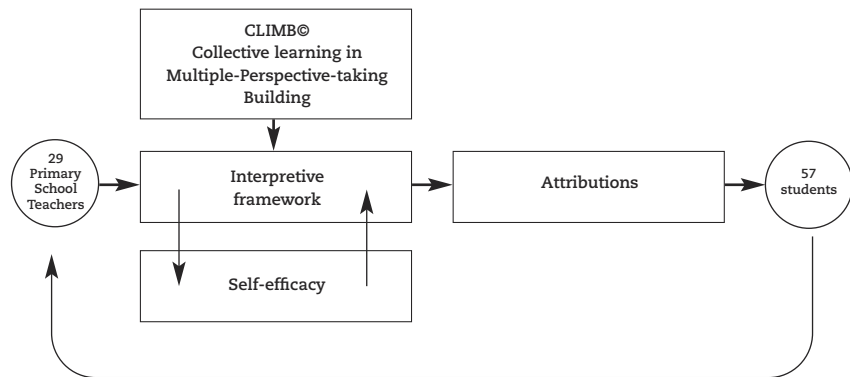
Method

Design

A practice-based pre-post evaluation examined changes from T₁ to T₂ following participation in CLIMB (Figure 2).

Changes were examined in:

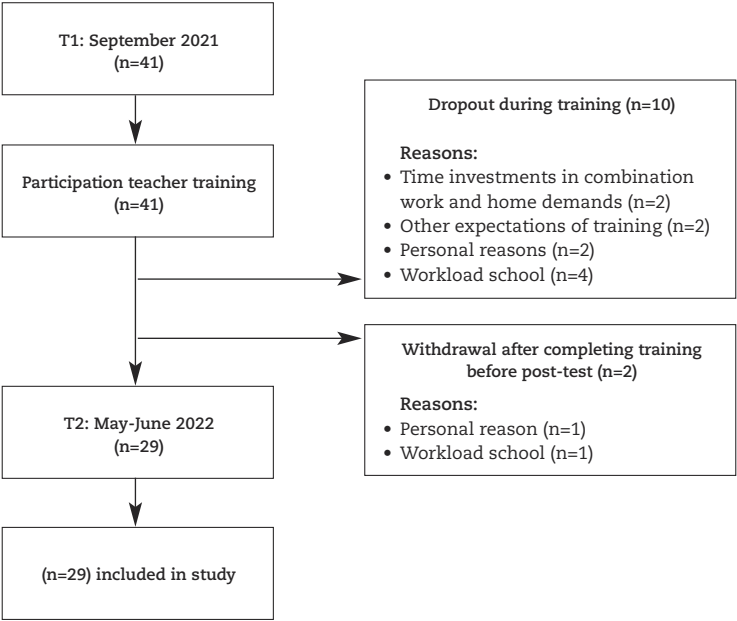
1. teachers' perceptions of students' problem behavior: Strengths and Difficulties Questionnaire, Teacher version (SDQ-T).
2. teachers' perceptions of the teacher-student relationship: Dutch adaptation of the Student-Teacher Relationship Scale (LLRV, Leerling-Leerkracht-Relatie-Vragenlijst)
3. teachers' self-efficacy: Teachers' Sense of Efficacy Scale (TSES)
4. teachers' application of multiple-perspective-taking and attributions: student-reports.



↑ **Figure 2.** Conceptual representation of the constructs examined in the practice-based pre-post evaluation of CLIMB

Participants

The study included 29 qualified teachers (1 male, 28 female) from 20 primary schools across nine school boards in nine municipalities north of Amsterdam, the Netherlands. The participating schools were situated in a compact region including villages and medium-sized cities with socioeconomically diverse communities. Participation was limited to a maximum of four teachers per school. Teachers' ages ranged from 27 to 57 years ($M=42$; $SD= 8.69$; median=41). Work experience ranged from one to 35 years ($M=15$; $SD=8.7$; median=15). Teachers selected two focal students displaying disruptive behavior according to their professional judgment within their classroom context. The selected students served as anchors for reflection on classroom interactions during the learning trajectory rather than as a basis for comparing student characteristics. One student moved to another school during the trajectory and was excluded from the post-measurement, resulting in a final sample of 57 students (43 male, 14 female). Students' ages ranged from four to 12 years ($M=7.51$, $SD=1.9$), with a median of seven. Figure 3 shows teacher participation across the study timeline.



↑ Figure 3. Flowchart Participation Teachers

Learning Program

CLIMB was systematically developed using educational design research (McKenney & Reeves, 2013) and tested, evaluated, and refined in a 2020 pilot.

The theoretical framework underlying CLIMB integrates insights from meta-biases theory (Gehlbach & Vriesema, 2019), perspective-taking research (Ottenheim-Vliegen et al., 2023), social-perspective-taking (Eyal et al., 2018), the presence approach (Baart, 2011), the bioecological model of human development (Bronfenbrenner & Morris, 2007), systemic analysis (Roevens, 2008; Scharmer, 2018), and needs-based working (Pameijer, 2017a, 2017b).

CLIMB uses a blended learning format combining classroom-based practice, face-to-face meetings, and virtual action learning in a dedicated online community. Table 1 provides a schematic overview.

The program unfolds over several months through iterative inquiry cycles. Teachers bring concrete classroom situations to the sessions and examine them through structured multiple-perspective-taking, combining observation, hypothesis testing, and reflection on how attributions shape pedagogical judgment and interaction. CLIMB focuses on reframing interpretive assumptions and strengthening relational attunement. Sessions are co-facilitated to model dialogical inquiry and sustain the exploration of divergent perspectives within authentic school contexts.

Lead time	start	Term 5-6 weeks	1. Meeting week 5/6	Term 5-6 weeks	2. Meeting week 10/11	Term 5-6 weeks	3. Meeting week 10/11	Term 5-6 weeks	4. Meeting week 20/21	Term 5-6 weeks	5. Meeting week 25/26
Estimated time investment Total: 56-60 hours	2 hours	7 hours	4 hours	7 hours	4 hours	7 hours	4 hours	7 hours	4 hours	7 hours	4 hours
Program focus	Why, how, what of the learning program	The perspective of the teacher and the whole situation		Perspective-taking & voice student and the whole situation		Perspective-taking & voice parents/care-takers - social network and the whole situation		Perspective-taking & voice class - school and the whole situation		Presentations of one's learning process with reflections on what is learned	
Blended	Start meeting	5 Terms 5-6 weeks: learning by doing + virtual learning interaction					Five physical four-hour meetings				
Learning activity	- Onboarding: participants/ program/ learning community - Formulating learning questions - The online learning community gives a complete overview of the program	- Creating learning products based on one's learning questions in practice with the program subjects. It explores, practices, and experiments with content. - Placing a learning product in one's portfolio in the learning community - Virtual learning interaction about each other's products					- Reflection on what is learned and the learning interaction - Deepening the reflection/learning with subject matter - Introduction to a new subject with discovery and exercises				

↑ Table 1. Flow chart CLIMB© program

Procedures

The teachers were recruited through flyers and group presentations introducing the learning program. The information did not specify the research objectives, but teachers were informed that CLIMB would provide tools to examine students' behavior more closely. They also received information about the study duration, timetables, and organization.

Teachers participated voluntarily without financial incentives and provided active, informed consent. The participating school boards approved the study. Parents also provided active informed consent for the use of teacher-written student-reports. The study did not affect the curriculum or students' learning activities.

The first measurement took place in September 2021, before CLIMB started in October, and the second in May-June 2022 after CLIMB ended in April.

All instruments were used according to manual requirements. The pseudo-anonymized student-reports were coded after collection. All teachers used the same format for student-reports. At T₁, teachers completed a free-format report describing students they perceived as displaying disruptive classroom behavior. At T₂, teachers were invited to revise the reports by removing, modifying, or adding information based on their current understanding. The reports were used exclusively for measurement and were independent of the program.

Test instructions were checked for clarity with non-participating teachers and teachers who had participated in the pilot year before. Data management followed the principles of the Declaration of Helsinki.

Measures

Perceived Student Behavior

To assess teachers' perceptions of student behavior, the validated Dutch translation of the SDQ-T (Diepenmaat et al., 2017) was used (SDQ-T; Goodman, 1997; Van Widenfelt et al., 2003; Theunissen et al., 2016). The SDQ-T is a teacher-report questionnaire commonly used for identifying psychosocial problems (Total Problem Score $\alpha=.84$) with five subscales: hyperactivity/inattention ($\alpha=.86$), emotional problems ($\alpha=.70$), peer problems ($\alpha=.62$), behavioral problems ($\alpha=.73$), and prosocial behavior ($\alpha=.77$) (Diepenmaat et al., 2017). The SDQ-T contains 25 items rated on a 3-point scale from 1 ('not true') to 3, ('certainly true'). According to normative scores (Diepenmaat et al., 2017), the Total Problem Score indicates no behavioral problems for boys scoring 0–9 and girls scoring 0–6; borderline (sub-clinical) for boys 10–12 and girls 7–9; and abnormal (clinical) for boys 13–40 and girls 10–40. The SDQ-T has

demonstrated stable test-retest reliability. The SDQ-T also includes impact questions about the severity and duration of the problem. The impact questions start with a question about the impact of emotional and psychological concerns on daily functioning. If no impact on daily functioning is reported, the teacher skips the remaining impact questions about emotions, concentration, behavior, or ability to get along with others. An elevated score indicating impairment in daily functioning may suggest the need for further assessment (Theunissen et al., 2016).

Perceived Student-Teacher Relationship

The Relationship Questionnaire (LLRV; Koomen et al., 2007), the Dutch adaptation of the Student-Teacher Relationship Scale (STRS; Pianta, 2001), was used to assess teachers' perceptions of the relationship with their selected students, including perceived student interactive behavior with the teacher and teachers' interpretations of the students' feelings toward the teacher. The Total Score ($\alpha=.88$) was obtained from 28 items divided into three subscales: closeness ($\alpha=.88$), conflict ($\alpha=.90$), and dependency ($\alpha=.78$) (Koomen et al., 2007). Responses are rated on a five-point scale from one (certainly not applicable) to five (certainly applicable). A total score was calculated for each student and converted into a standard score, adjusted for age and gender. Analysis used these standard scores. A norm-score of six and lower on total LLRV and Closeness is worrisome, and ≥ 8 is positive. The norm-scores on Conflict and Dependency are inverse: ≥ 13 is worrisome, and ≤ 12 is not worrisome. Dutch test-retest correlations showed reasonable stability ($N = 177$): $r = .70$ (Total), $.73$ (Closeness), $.72$ (Conflict), $.52$ (Dependency). American correlations were higher but were measured over four weeks rather than 17 weeks ($r = .89, .88, .92, .76$, respectively).

Teachers' Self-Efficacy

The teachers' self-efficacy was measured using the Dutch translation of the 24-item long form of the Teachers' Sense of Efficacy Scale (TSES; Tschannen-Moran & Woolfolk Hoy, 2001; Goei & Schipper, 2016). The TSES is divided into three subscales: instructional strategies ($\alpha=.79$), classroom management ($\alpha=.91$), and student engagement ($\alpha=.91$). Responses are rated on a nine-point Likert scale ranging from one ("nothing") to nine ("a great deal") (Schipper et al., 2020). Higher scores indicate a stronger perceived teaching efficacy.

Content Analysis of Student-Reports

To assess teachers' written expressions of multiple-perspective-taking and attribution patterns, teachers completed a web-based student-report. The student-report is based on seven principles of needs-based working (Pameijer, 2017a).

It guides teachers through four assessment stages (Observe, Understand, Plan, Realize). Multiple-perspective-taking is encouraged by questioning the four perspectives of 1) the Student, 2) the Learning-Teaching-Situation (teacher, colleagues, peers, group, school), 3) the Home-Situation (parents, siblings, environment), and 4) the Social-Network (family, friends, neighborhood, outdoor activity, professionals). The process goal is to identify effective interventions and create a tailored learning environment by understanding the student-environment interaction and the student's educational and developmental goals and needs.

This method is based on the theoretical framework described in a cross-sectional study by Ottenheim-Vliegen et al. (2025). Teachers' written responses during the Observe and Understand phases were used to assess multiple-perspective-taking and attributions:

1. Multiple-perspective-taking measures within Observe:
 - 1.1. The number of characters written per perspective.
 - 1.2. The number of characters describing Strengths and Weaknesses per perspective.
 - 1.3. The number of observation segments assigned to a perspective (student, teacher, colleague, parent, or others).
 - 1.4. Multiple-perspective-taking observation quality was measured by coding whether teachers expressed observations in a 'cinematic', 'global', or 'interpretative' manner following Ottenheim-Vliegen et al. (2025).
2. Attribution measures within Understand:
 - 2.1. The number of Strengths and Weaknesses attributed to the four perspectives.
 - 2.2. The number of needs attributed to the four perspectives.

Analyses

Pre-post differences in SDQ-T, LLRV, and TSES were examined using two-tailed dependent t-tests at $p < .05$. Effect sizes were calculated using Cohen's d and interpreted using conventional benchmarks (Cohen, 1992). SDQ-T and LLRV were analyzed within stable teacher-student dyads based on teachers' ratings ($N = 57$). TSES was analyzed at the teacher level ($N = 29$). For SDQ-T and LLRV, these analyses reflect within-dyad shifts in ratings assigned by the same teacher to the same student before and after participation in CLIMB. Because focal students were nested within teachers, analyses did not model between-teacher variance; results therefore represent change in teacher-rated evaluations within dyads rather than independent student-level effects.

Teachers' written responses in the student-reports were coded, counted, and compared. Coding followed a codebook and instruction manual; data were systematically segmented and coded to assess teachers' multiple-perspective-taking and attributions. Uncompleted sections were coded as zero.

The counting, segmentation, and coding were carried out by three trained master's research assistants from Leiden and Radboud universities under the supervision of a senior educational researcher. Using multiple coders with diverse backgrounds increased procedural rigor (McDonald et al., 2019). Inter-rater reliability (IRR) was used to assess coding consistency, with a mean Cohen's kappa of $\geq .60$, which was deemed substantial. Initially, each coder worked independently on the first case, compared results, resolved disagreements, and revised the codebook. Coders then analyzed three cases independently, with IRR assessed using Cohen's kappa (Light, 1971). Changes in student-reports between T1 and T2 were analyzed using the Wilcoxon signed-rank test due to non-normal distributions.

Additionally, a general Z-test examined whether the change in total character count was Significant.

Results

Statistically significant changes were found for SDQ-T total problem score (effect size -0.271) and prosocial score (effect size 0.223). TSES scores increased significantly for the total scale (effect size 0.723), classroom management (effect size 0.520), and instructional strategies (effect size 0.833).

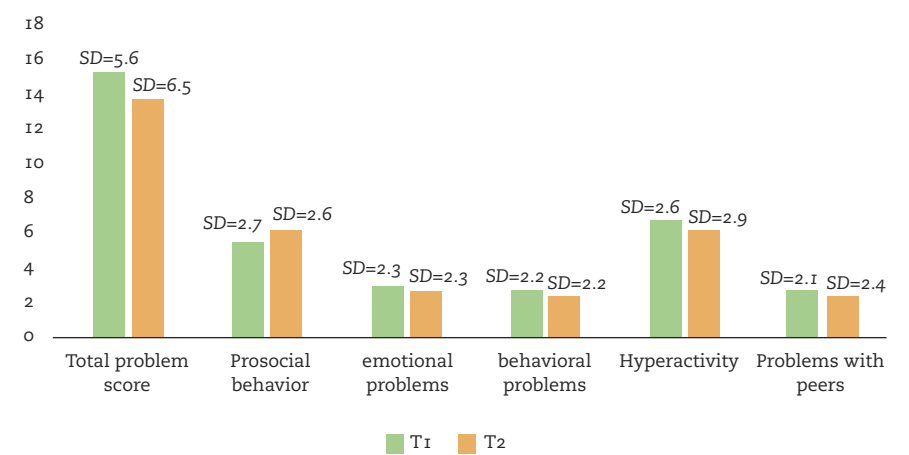
LLRV scores decreased significantly on the total scale (effect size -0.641), Closeness (effect size -0.620), and Dependency (effect size 1.239).

The student-reports measures showed little change in attribution patterns. Some indicators of multiple-perspective-taking increased at T2, including the total number of characters, interpretative observation segments, and reporting on the Home-Situation and Social-Network perspectives. However, the relative distribution of perspectives and observation types remained largely similar across T1 and T2.

Perceived Student Behavior

Visual inspection (Figure 4) suggests a downward shift in teachers' ratings of student problem behavior between T1 and T2. The Total Problem Score decreased significantly (T1: $M=15.32$, $SD = 5.61$, T2: $M=13.68$, $SD=6.45$; $t(56)=2.3$, $p=.025$, effect size = -0.271). Prosocial behavior also increased significantly ($t(56)=2.24$, $p=.029$, effect size = 0.223).

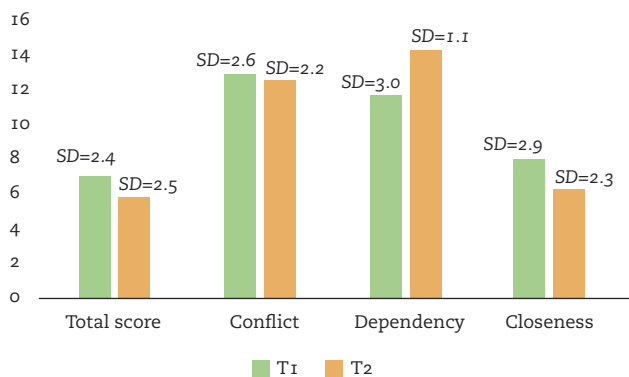
At T1, 95% of the students scored above the subclinical total score, and none of the teachers skipped the impact questions. The proportion of students rated within the ‘typical behavior range’ increased from three (5%) at T1 to five (9%) at T2. Impact questions indicated a decrease in perceived daily impact from 100% (T1) to 95% (T2). There was a significant difference in ratings on the impact question: ‘Do the difficulties hinder the student’s daily life when learning in the classroom?’ Teachers scored on average 0.35 lower on a 4-point scale at the second measurement ($t(56)=3.45$, $p<.001$, effect size = -0.401). The other impact questions showed no significant differences.



↑ Figure 4. SDQ-T, mean scores at T1 and T2 (N=57), Minimum score= 0, Maximum score= 40

Perceived Student-Teacher Relationship

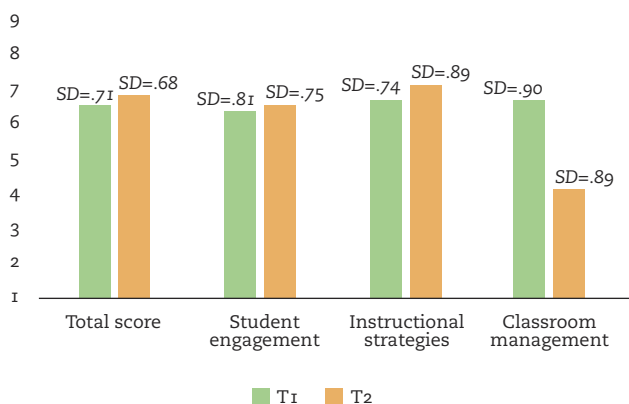
The total mean score on the perceived student-teacher relationship changed from not worrisome (T1:M=7.00,SD=2.38) to worrisome (T2:M=5.75,SD=2.50) (Figure 5). The total mean score at T2 was significantly lower ($t(56)=4.85$, $p<.001$; effect size = -0.641). There was also a shift in the subscales. At T2, teachers scored 1.6 lower on Closeness ($t(56)=4.95$, $p<.001$; effect size = -0.620), and the scores dropped from ‘average’ to ‘worrisome’. The Dependency scores increased from M=11.51 (SD=3.05) (average) to M=14.11 (SD=1.15) (subclinical), ($t(56)=7.00$, $p<.001$, effect size = 1.239). Both Conflict scores were average (<13) and did not differ significantly.



↑ Figure 5. LLRV, mean score based on norm scores (1-19) at T1 and T2 (N=57)

Self-Efficacy

Figure 6 shows an increase in teachers' self-efficacy. Compared with norm scores (Tschannen-Moran & Woolfolk Hoy, 2001), teachers' total mean scores increased from "more than some influence" ($M=6.60$, $SD=.71$) to "quite a bit of influence" ($M=7.10$, $SD=.68$). This is a significant increase in self-efficacy ($t(27)=4.98$, $p<.001$, effect size = 0.723). A significant increase is also visible on the subscales of Classroom Management ($t(27)=3.60$, $p<.001$, effect size = 0.520) and Instructional Strategies ($t(27)=4.38$, $p=.001$, effect size = 0.833). The average score on the Student Engagement increased by 0.47 points. However, a Shapiro-Wilk test indicated that the scores on this scale are skewed ($W=0.89$, $p=0.008$): no significance test was conducted.



↑ Figure 6. TSES, Mean scores scales at T1 and T2, N=29

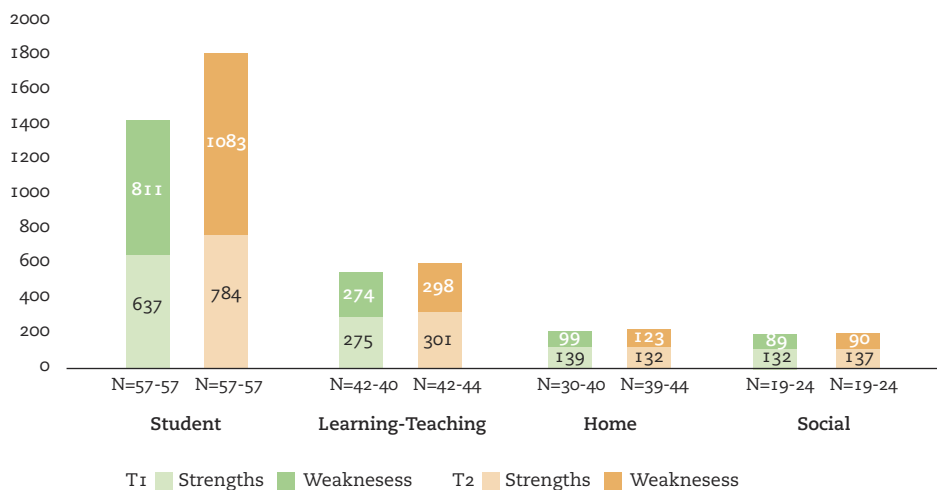
Content Analyses of Student-reports

Multiple-Perspective-Taking-Measures within Observe. Descriptive statistics for characters per perspective and total at T1 and T2 are shown in Table 2. Across the 57 reports, the number of characters increased significantly ($Z=-5.45$, $p<.001$). At T2, teachers were free to change or delete texts if they thought appropriate; 82% of the 57 reports contained more characters and 11% fewer.

Perspective	N	Min-Max	T 1			T 2			increase		
			Sum	Mean	SD	N	Min-Max	Sum		Mean	SD
Student	57	275-743 ¹	82,529	1447.88	1291.39	57	289-7879	106,447	1867.47	1466.74	29%
Learning-teaching-situation	45	39-1365	23,857	530.16	351.54	44	56-1449	25,747	585.16	373.48	8%
Home-situation	41	21-600	8,134	198.39	146.95	45	40-600	11,239	249.76	154.35	38%
Social network	25	41-627	4,651	186.04	158.06	34	30-627	6,411	188.56	155.30	38%
Total	57	289-8462	119,171	2090.72	1610.05	57	449-7879	149,843	2628.82	1649.03	26%

↑ **Table 2.** Descriptive statistics number of characters student-reports per perspective in stage Observe, excl. blanks, n = filled out

Character counts increased differently across perspectives. The largest increase was in the perspectives home-situation and social-network; largely associated with a higher number of reports completed for these perspectives at T2. The smallest increase was in the teaching-learning situation, with one less complete report. The distribution of Strengths and Weaknesses over the four perspectives (Figure 7) shows that the increase in the main score was mainly caused by students' weaknesses (+34%) and less by strengths (+23%). Nevertheless, the small number of mean characters in the home situation showed a 33% growth in Weaknesses.



↑ Figure 7. Mean characters Strengths-Weaknesses per perspective, excluding blanks

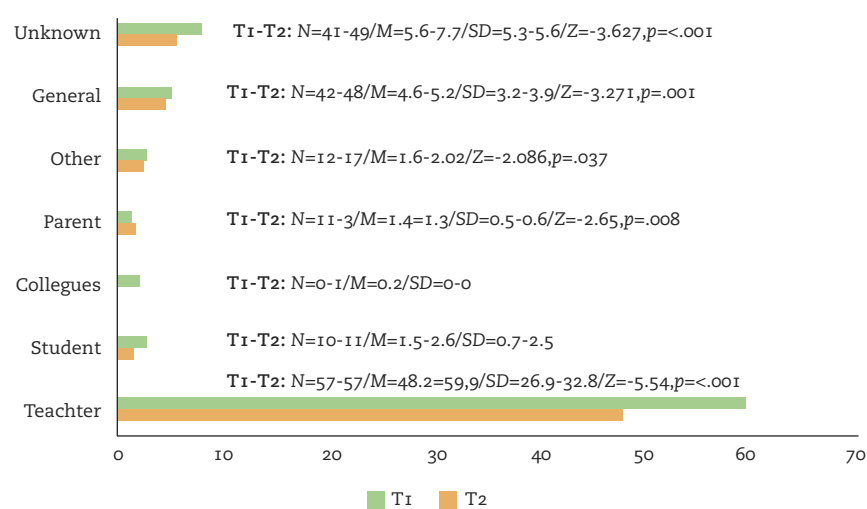
Analyses of the quality of MPT-observations (Table 3) showed that 4/5th of all observations were interpretations, with a significant increase (30%) in 88% of the reports ($Z = -5.831$, $p < .001$). Four reports showed fewer interpretation segments. The measurements showed a significant increase in global observation segments ($Z = -2.792$, $p = .005$); in T2, 33 reports had more global observations, and sixteen had fewer global observations. The increase in the cinematic observations was not statistically significant ($Z = -1.775$, $p = .076$); three reports had more cinematic observations in T2. The distributions of observation types at T1 and T2 were largely similar.

Observation type	T 1				T 2			
	N	Min-	Sum (%)	M SD Max	N	Min-	Sum (%) Max	M SD
Cinematic	19	1-4	33(1%)	1.74 (0.87)	21	1-10	61(1.5%)	2.90 (3.03)
Global	56	1-31	592(18%)	10.57 (7.72)	57	1-34	673(16.3%)	11.81 (8.62)
Interpretation	57	10-125	2604(81%)	45.68 (26.57)	57	15-152	3384(82.2%)	59.37 (31.94)

* Reports without an observation type were excluded; N=reports

↑ Table 3. Descriptives of MPT- observation qualities.

Figure 8 shows the distribution of the mean segments assigned to a perspective: students, teachers, colleagues, parents, and others. The code unknown was used when the perspective could not be identified to an actor, and a general fact, like parents divorced, was scored as general. The number of segments assigned to the teacher perspective was the largest in both measurements, and the difference percentage in T1 was 85% (N=57, M=48.23, SD=26.91) and in T2, 83% (N=57, M=59.88, SD=32.81). The assignments to Students, Colleagues, and Parents were small, with almost no shift in percentage of the total in both measurements.



↑ Figure 8. Mean number segments assigned to a perspective, excl. blanks at T1 and T2

Attribution-measures within Understand. Table 4 shows the attributions of Strengths and Weaknesses (in percentages) per perspective on T1 and T2. In T1 and T2, the largest percentage of Weaknesses was attributed to the students, with a slight increase at T2. “Zero Strength” attributed to the student decreased at T2, and “more than one” Strength increased. The Learning-Teaching-Situation, Home-Situation, and Social-Network showed minimal attributed Strengths and Weaknesses with minimal changes.

Pers- pective	Student				Learning-Teaching Situation				Home-Situation				Social Network			
	Strengths		Weakness		Strengths		Weakness		Strengths		Weakness		Strengths		Weakness	
T	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd
Non	68%	47%	2%	4%	84%	65.5%	89%	84%	100%	96%	98%	95%	98%	96%	98%	9%
I	25%	24%	5%	0%	12%	29%	9%	14%	0%	4%	2%	5%	2%	4%	2%	2%
>I	7%	29%	93%	96%	4%	5.5%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%

↑ Table 4. Strengths and Weaknesses in the Integrative Picture in percentages on T1 (N=56) and T2 (N=55), excluded are reports without an integrative picture

Table 5 shows the number of attributes per perspective, with minor shifts between T1 and T2. The most needs were attributed to the student (T1: M=3.8, SD=3.2, T2:M=4.0, SD=3.0) and teacher (T1: M=0.9, SD=1.4, T2:M=1.0, SD=1.6). A minimal number of needs were attributed to others perspectives, and some segments could not be identified and were coded as Unclear.

N=57 T	Student		Teacher		School		Parents		Social network		Otherwise		Unclear	
	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd
Min.-Max	0-23	0-19	0-23	0-24	0-6	0-6	0-5	0-9	0-2	0-2	0-4	0-6	0-12	0-18
Sum	232	264	238	275	40	35	20	33	4	3	9	17	179	213
Mean	4.07	4.63	4.18	4.82	0.70	0.61	0.35	0.58	0.07	0.05	0.16	0.30	3.14	3.74
SD	4.58	4.49	4.92	4.83	1.43	1.24	0.90	1.51	0.37	0.29	0.68	1.00	3.65	4.20

↑ Table 5. Number of Needs attributed to a perspective of T1 and T2

Discussion

This practice-based evaluation examined changes in teachers' interpretative responses to disruptive classroom behavior following participation in a multiple-perspective-taking learning program.

The main finding is a decrease in perceived disruptive student behavior, alongside increased prosocial behavior and higher teacher self-efficacy. However, teachers' written student-reports showed little structural change in attribution patterns or perspective distribution, despite increased text length and observation segments. Additionally, the perceived quality of the teacher-student relationship did not improve.

Teachers' more positive evaluations of student behavior after CLIMB are important to the field. This finding aligns with the decrease in suspensions reported by Okonofua et al. (2016a) who examined the effects of prompting teachers to consider misbehaving students' perspectives. Teachers' perceptions of a student's behavior shape learning expectations (Bakker & Bosman, 2006), which in turn influence students' motivation, sense of competence, and learning performance (Rubie-Davies, 2010; Van den Bergh et al., 2021). Acknowledging strengthening factors is also associated with resilience (Hamby et al., 2018). Higher expectations are linked to more connective communication (Frenzel et al., 2018; Wang & Hall, 2018). More prosocial behavior may strengthen teachers' willingness to invest in the relationship (Zee, 2016). Decreasing problem behavior and increasing prosocial behavior may also matter for teachers' well-being and motivation (Goei & Kleijnen, 2010; Spilt et al., 2011). Motivated teachers are resilient, which is important given the incidence of teacher burnout.

The increase in teachers' self-efficacy is also meaningful because perceived capacity is an important predictor of responsive teacher behavior (Almog & Shechtman, 2007; Schipper et al., 2020; Summers et al., 2017; Woodcock & Faith, 2021; Zee, 2016). Higher self-efficacy is associated with better cooperation with colleagues and parents, greater ability to cope with challenges, and higher motivation and job satisfaction (Hettinger et al., 2021; Skaalvik & Skaalvik, 2016). Teachers' perceptions of their competencies also affect students' academic success and emotional well-being (Almog & Shechtman, 2007; Buttner et al., 2015; Hettinger et al., 2021; Jennings & Greenberg, 2009; Zee, 2016).

One might expect reduced disruptive behavior, increased prosocial behavior, and higher self-efficacy to lead to a more positively perceived teacher-student relation-

ship. However, this did not appear; instead, the perceived relationship decreased, and no clear shift in the distribution of multiple-perspective-taking or attribution patterns was found in the student-reports. At first glance, this may seem difficult to interpret. One possibility is that increased awareness led teachers to view interactions with the selected students more critically, resulting in a more critical appraisal of the relationship. This hypothesis of a more critical but probably more elaborated view is supported by the increase in perceived weaknesses in the second measurement. Negative student emotions may have a higher impact on teachers' perception of the relationship, not only the emotions during the interactions but also the remembered outcomes of the interpersonal relationship (Goetz et al., 2021). Change in the perceived relationship quality may lag behind more positive behavior ratings (Goetz et al., 2021). A possible "sleeper effect" may also be present, which warrants further research.

Contrary to expectations, CLIMB did not lead to a clear shift in the distribution of perspectives in the written student-reports despite a slight increase in the focus on home-situations and social-networks. Like the first, the second set of student-reports primarily reflected teachers' interpretations during the observation stage, focusing on student-controlled behavior. Several factors may explain this.

Importantly, student-report writing was not part of the program; teachers did not receive feedforward on their student-reports. Another reason may be that written application of multiple-perspective-taking reflects a higher-order level of mastery in Bloom's taxonomy (Starr et al., 2008).

In the second measurement, teachers predominantly added new text rather than modifying or removing existing text, despite the instruction to do so when appropriate. Removal of earlier text was limited. A possible explanation is that analyzing one's writing is demanding; it requires higher-level skills and considerable time and effort. Related to this investment, teachers indicated in evaluation sessions that workload affects the quality of writing. Future research should examine transfer of learning outcomes from CLIMB in student-reports, preferably using a design that prevents prior written texts from influencing teachers' responses. Evidence suggests that Dutch teachers perceive student-reports as bureaucratic and prefer to allocate that time to teaching activities instead (Smeets et al., 2017). However, reporting can be crucial in analyzing and understanding student behavior within the educational environment (Pameijer, 2017a). The ability and willingness to describe behavior accurately are essential professional competencies that affects both student support and learning outcomes (Koskela & Lanas, 2016). Student-reports facilitate reflection and self-evaluation, underscoring the importance of investing in their quality to support environmentally informed educational decisions.

Limitations

This exploratory multiple-measure study has several limitations. First, it was executed during a stressful year due to the COVID-19 pandemic and the associated changes in school regulations, restrictions, and closures. One of the meetings used videoconferencing due to COVID-19 lockdown measures, and the participants experienced increased work pressure.

Second, a follow-up design was limited. A long-term design may help examine whether observed changes persist over time and possibly reduce recall bias in perceived relationship quality. Third, the teachers who participated were highly motivated, potentially resulting in a positive selection bias.

Fourth, although multiple-perspective-taking by teachers is important, the study examined changes in teachers' responses. Further research should also include changes in student and parent perspectives.

However, a significant strength of this study is the practice-based approach, which is likely to directly improve teaching-learning environments and empower teachers (Biesta, 2020). Teachers from a broad range of schools participated, suggesting that similar patterns may also be present in other school settings implementing CLIMB. Future research may examine the interrelations among interpretative framing, self-efficacy, and teacher-rated behavioral evaluations within structurally specified models. Such approaches could contribute to a more integrated understanding of how professional learning processes translate into shifts in classroom appraisal. Interpretative frameworks are shaped by socio-cultural norms concerning behavior and inclusion. The present study examined the broadening of teachers' interpretative framing of disruptive classroom behavior. Although the CLIMB trajectory engaged teachers in social-perspective-taking, the study did not examine how broader cultural norm frameworks shape interpretative shifts. Future research may explore how interpretative broadening unfolds across diverse cultural and policy contexts.

The reported interpretive shifts can also be understood within a broader biopsychosocial-ecological perspective on classroom behavior. From this perspective, disruptive behavior is not located solely within the individual student but emerges from dynamic interactions among cognitive, emotional, relational, and contextual processes (Bronfenbrenner & Morris, 2007; Borsboom & Cramer, 2013). Narrow attributional framing risks reifying behavior as a fixed individual deficit, reinforcing exclusionary disciplinary logics that locate responsibility primarily within the student (Welsh & Little, 2018).

In contrast, interpretive broadening repositions behavior within relational and systemic dynamics. Within this view, inclusive pedagogy does not primarily consist of

adding differentiated strategies, but of reshaping how teachers understand participation, agency, and responsibility in the classroom (Florian & Black-Hawkins, 2011). The shifts described by participants – toward greater interpretative awareness and ecological sensitivity, as dialogical engagement – reflect movement from linear, student-centered causality toward a more relational and context-sensitive understanding of classroom life. In this sense, multiple-perspective-taking functions not merely as a cognitive skill, but as a mechanism through which ecological responsiveness and inclusive orientation are enacted in everyday pedagogical practice.

Conclusions

This practice-based evaluation indicates that participation in the multiple-perspective-taking learning program was associated with shifts in teachers' interpretative responses to disruptive classroom behavior. Although no clear change was found in attribution patterns or perspective distribution in the written student-reports, teachers perceived more prosocial behavior in students and judged the same behavior less problematic after participation. The observed increase in teachers' self-efficacy suggests they felt better equipped to respond constructively to these challenges. Strengthening teachers' multiple-perspective-taking capacities may be relevant for educational practices aimed at more inclusive and resilient learning environments.

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Chapter 6

General discussion

Introduction

This dissertation addresses a persistent challenge in education: how teachers respond to disruptive student behavior in learning environments. Disruptive behavior is often approached through behavioral management strategies or student-focused explanations. However, such approaches risk overlooking a central feature of pedagogical practice: behavior does not present itself as an objective phenomenon. Rather, it becomes meaningful through the interpretations teachers construct in interaction with students and within the broader relational and institutional ecology of educational practice.

From this perspective, teachers' interpretations function as mediating processes that shape how behavior is understood, how responsibility is distributed, and which pedagogical actions teachers may consider feasible. These interpretive processes are influenced by teachers' beliefs, emotions, relational histories, and contextual conditions. When interpretive frameworks become narrow, teachers may experience fewer perceived possibilities for pedagogical action, which can reinforce reactive responses and exclusionary practices. Understanding how teachers interpret disruptive behavior, and how these interpretive processes may be enriched, is therefore central to supporting inclusive and sustainable learning environments.

Building on this premise, the central research question guiding this dissertation was: *Can teachers' interpretive decision-making processes regarding challenging classroom behavior shift through multiple-perspective-taking within pedagogical-ecological learning environments?*

To address this question, four interconnected studies examined different aspects of teachers' interpretive processes.

The first study, a scoping review, mapped the existing knowledge base on teachers' perspective-taking in coping with disruptive classroom behavior. It showed that empirical research in this area remains limited and conceptually narrow, while teachers' perspective-taking processes in practice largely remain a black box.

The second study, a cross-sectional content analysis of teachers' written student reports, examined how teachers engage in multiple-perspective-taking and attribution in their interpretations of student behavior. The findings showed that teachers often acknowledged different perspectives, yet primarily interpreted student behavior through student-focused explanations, with responsibility for change mainly attributed to the student.

In the third study, based on a design-based inquiry, a professional learning program was developed focusing on multiple-perspective-taking (CLIMB®), grounded in and operationalizing the Pedagogical–Ecological Interaction Schema (PEIS; see Figure 1, Chapter 4). The study further explored how teachers experience learning multiple-perspective-taking through participation in the program. Teachers reported shifts in interpretive frameworks, enacted agency, and relational dynamics, reflected in greater attributional awareness, broader perceived pedagogical repertoires, and deeper trust-based relationships with students and parents.

The fourth study, a practice-based evaluation, examined how participation in the learning program CLIMB® relates to changes in teachers' perceptions of student behavior, teacher–student relationships, self-efficacy, and written interpretations of student behavior. The results showed increased teacher self-efficacy and more positive appraisals of student behavior, reflected in lower ratings of problem behavior and higher ratings of prosocial behavior. At the same time, teachers reported a decrease in the perceived quality of the teacher–student relationship. The written student-reports showed little structural change in attribution patterns or in the distribution of perspectives.

The findings across the four studies contribute to a more nuanced understanding of teachers' interpretive decision-making as a relational, embodied, and ecologically situated process shaped through pedagogical interaction. Across the studies, interpretation emerged as an ongoing process through which teachers perceive, differentiate, and respond to behavior within learning environments. They further indicate that multiple-perspective-taking is not yet a habitual feature of teachers' interpretive practice, but can be deliberately cultivated through sustained professional learning in ways that enrich interpretive frameworks, expand teachers' perceived pedagogical possibilities, and strengthen teachers' sense of professional agency.

Integrating insights across the four studies

Across the four studies, teachers' interpretations of behavior in learning environments are not fixed judgments but dynamic interpretive processes enacted within pedagogical interaction, through which situations become understood in different ways. Interpretation emerges at the intersection of cognition, emotion, relational histories, and contextual affordances, shaping how behavior is understood, where responsibility for change is located, and which pedagogical responses teachers may

perceive as feasible (Bronfenbrenner & Morris, 2007; Frenzel et al., 2018; Sameroff, 2009). Within this interpretive process, multiple-perspective-taking may enrich how situations are understood, while attribution functions as a mechanism through which interpretations are translated into explanations and pedagogical responses.

The scoping review revealed that empirical research on teachers' perspective-taking in relation to disruptive behavior remains limited and conceptually fragmented. Existing studies predominantly focus on single perspectives, most often on teachers' taking the student's perspective, while largely overlooking teachers' subjective interpretive processes within relational and institutional contexts (Gehlbach, Young, & Roan, 2012; Lobchuk, 2006). As a result, the ways in which teachers actually integrate multiple perspectives when interpreting disruptive behavior in learning environments remain insufficiently understood.

The cross-sectional study examined teachers' written reports describing students whose behavior teachers experienced as disruptive. These reports offered insight into teachers' interpretive reasoning in situ. While teachers frequently acknowledged contextual elements surrounding the student, their explanations tended to remain dominated by teachers' own perspectives and student-focused attributions. These patterns resonate with attribution research showing that behavior is often explained through stable, individual causes, particularly under conditions of stress or low perceived efficacy (Wang & Hall, 2018; Weiner, 2010). From this perspective, attribution may function as a critical interpretive process through which teachers' emotional responses, perceived control, and interpretive openness become shaped in pedagogical situations (Frenzel et al., 2018; Zee & Koomen, 2016). In this way, attribution connects teachers' interpretations of behavior with their perceived possibilities for pedagogical action.

Building on these insights, the design-based study explored how professional learning might deliberately engage teachers' interpretive processes. The CLIMB© program created opportunities for teachers to explain disruptive behavior through multiple-perspective-taking and to reflect on their own interpretive assumptions. During the program, professional learning was addressed as embodied experience, dialogical exchange, and ecological positioning. Teachers reported becoming more aware of their interpretive filters and more open to alternative explanations of behavior. Participants described shifts from immediate, reactive interpretations toward more reflective inquiry. These experiences align with research on inquiry-oriented and relational professional learning, which suggests that professional learning can support teachers in developing more context-sensitive forms of

professional judgment (Avalos, 2011; Edwards, 2010; Kennedy, 2016). Rather than primarily introducing new behavioral techniques, the learning process appeared to influence the interpretive layer through which teachers understand behavior in learning environments.

The evaluation study provided initial empirical indications that engaging teachers in a learning program of multiple-perspective-taking may influence how they appraise student behavior and their own professional capacity to respond to student behavior. Teachers reported increased self-efficacy in dealing with disruptive behavior, a reduced appraisal of student behavior as problematic, and increased attention to students' prosocial behavior. In addition, teachers' written reports showed more extensive descriptions of contextual factors and greater explicit use of multiple perspectives and higher divergence in attributions when describing students' situations.

At the same time, these changes were not accompanied by immediate or uniform improvements in teacher–student relationships. While reflective accounts suggested emerging relational awareness, quantitative indicators showed a short-term decrease in perceived relationship quality. These findings suggest that interpretive shifts do not directly affect relational dynamics. As teachers become more attentive to interactional dynamics and relational tensions, increased awareness of relational qualities may initially coincide with more critical or tension-sensitive evaluations of teacher–student relationships (Koenen et al., 2021; Sert et al., 2025). Shifts in interpretation may, however, precede observable changes in relational dynamics, although this requires further investigation.

A plausible interpretation is that increased interpretive awareness destabilizes previously taken-for-granted interpretations before new relational patterns become established. Heightened awareness may make tensions within relationships more visible, even while teachers experience increased professional confidence in responding to behavior. This interpretation aligns with research on emotional memory and relational appraisal, suggesting that greater awareness can initially surface relational tensions before longer-term relational change becomes consolidated (Goetz et al., 2021; Spilt et al., 2011).

Additionally, the design-based and evaluation studies suggest that different forms of data may make different aspects of professional change visible. Experiential accounts of professional learning illuminate shifts in interpretive awareness and enacted agency, whereas quantitative indicators and written reports tend to reflect

more stabilized interpretive and relational patterns. These differences may indicate that professional change unfolds gradually and unevenly over time (Kelchtermans, 2009; Opfer & Pedder, 2011).

Taken together, the findings across the four studies suggest that shifts in teachers' interpretive awareness, self-efficacy, attributional patterns, and relational dynamics do not necessarily develop simultaneously. While changes in teachers' interpretive frameworks and perceived self-efficacy became visible within the professional learning context, attributional patterns and relational dynamics appeared more resistant to short-term change. These differences may reflect the extent to which such processes are embedded in longer interactional histories and emotional experiences (Goetz et al., 2021; Kelchtermans, 2009; Opfer & Pedder, 2011; Spilt et al., 2011).

Interpreting Behavior within Pedagogical Ecologies

Across the studies, interpretation consistently appeared as an ecological phenomenon rather than an individual cognitive act. Teachers' interpretive frameworks function as mediators within pedagogical ecologies, filtering experiences through beliefs, emotional states, relational histories, and institutional norms (Fives & Buehl, 2012; Koskela & Lanås, 2016). Behavior gains meaning only within the relational field in which it is perceived and enacted (Biesta, 2020).

This perspective positions teachers not as external observers of behavior but as embedded participants whose interpretations both shape and are shaped by the pedagogical ecology. Such recursive interdependence aligns with transactional models of development (Sameroff, 2009) and ecological conceptions of human functioning (Bronfenbrenner & Morris, 2007). Disruptive behavior is thus reframed not as a student attribute but as a relational event situated within ongoing interactional dynamics.

Within this ecology, interpretation becomes a site where agency, responsibility, and pedagogical judgment intersect. How behavior is interpreted affects not only immediate responses but also relational climates, inclusion, and opportunities for learning (Booth & Ainscow, 2002; Rubie-Davies, 2009).

Engaging Interpretive Practice Through Professional Learning

Within the professional learning context, teachers described shifts in interpretive awareness and professional agency. Teachers reported becoming more aware of their own interpretive positioning, more capable of holding alternative perspectives, and more reflective in responding to disruptive behavior. These shifts emerged in learning contexts that encouraged teachers to slow down, articulate uncertainty, and engage with difference through relational and dialogical inquiry, characteristics that have also been associated with inquiry-oriented professional learning in earlier research (Beauchamp & Thomas, 2009; Kennedy, 2016).

The design-based and practice-based evaluation studies suggest that engaging teachers' interpretive practice involves more than learning behavioral strategies or isolated cognitive techniques. Rather than being reducible to cognitive training alone, interpretive development appeared to emerge through embodied, relational, and dialogical forms of professional learning.

Across both studies, converging patterns can be observed in teachers' interpretive development and professional agency. In the design-based study, teachers described a growing awareness of their own interpretive positioning, an increased capacity to hold alternative perspectives, and a strengthened sense of professional agency in dealing with disruptive behavior. These experiential learning outcomes align with the evaluation study, which showed increases in teachers' self-efficacy, reductions in perceived problem behavior, and heightened teacher attention to the pro-social behavior of selected students following the learning program.

At the same time, the juxtaposition of the two studies reveals an important divergence in the relational domain. Whereas teachers in the design-based study reported experiencing more positive relationships with students as part of their learning reflections, the evaluation study showed no corresponding improvement in measured teacher–student relationship quality in the short term; instead, a temporary decrease was observed. In addition, teachers' written student reports became more elaborate and contextually enriched, yet their underlying interpretive and attributional patterns remained structurally similar.

Taken together, these findings suggest that changes in interpretive awareness, self-efficacy, and relational dynamics may not develop simultaneously within professional learning processes. While shifts in interpretive awareness and perceived

self-efficacy became visible during the learning trajectory, changes in relational patterns appeared less pronounced in the short term. Rather than indicating inconsistency, this divergence may point to the possibility that professional learning unfolds in layered and temporally uneven ways in which interpretive and agentic developments may precede, and potentially condition, subsequent relational change. Similar complexities and divergences between teacher self-efficacy, interaction quality, and student-related outcomes across ecological levels have also been observed in recent classroom ecology research (de Ruig et al., 2024).

Across the design-based and evaluation studies, professional learning contexts that encouraged sustained engagement with interpretation, dialogue, and reflection were associated with shifts in teachers' interpretive awareness and professional agency. These findings align with perspectives on professional learning that emphasize the integration of knowing, feeling, and acting over time (Avalos, 2011; Biesta, 2015; Kennedy, 2016; Opfer & Pedder, 2011).

Multiple-Perspective-Taking as Epistemic and Agentic Practice

Across the studies, multiple-perspective-taking is conceptualized not as a discrete social-cognitive skill, but as an epistemic practice: a way of knowing through which teachers learn to hold divergent interpretations in relation to the broader pedagogical ecology (Eyal et al., 2018; Gehlbach & Vriesema, 2019). Rather than accumulating viewpoints, this practice involves sustained engagement with difference, uncertainty, and contextual interdependence in the interpretation of pedagogical situations. Within this research trajectory, multiple-perspective-taking operates at the level of interpretation and attribution. By positioning multiple-perspective-taking as an epistemic and embodied competence, this dissertation opens a conceptual space for examining how such a practice may inform teachers' interpretive agency within complex pedagogical ecologies.

When enacted over time, multiple-perspective-taking appears to expand teachers' interpretive awareness and to reconfigure their sense of agency in practice. The findings suggest that agency does not reside solely in individual decision-making capacity, but is enacted within relational, temporal, and institutional dynamics (Biesta & Tedder, 2007). Through repeated engagement in multiple-perspective-taking, teachers cultivate a form of agency grounded in responsibility, openness, and ethical responsiveness rather than control. This agency is not limited to

reshaping pedagogical environments but unfolds as a gradual reorientation of how teachers perceive, value, and position themselves in relation to students and situations (Biesta & Tedder, 2007; Fives & Buehl, 2012; Kelchtermans, 2009).

Such reorientation is inherently embodied: stress, emotional regulation, and relational safety shape which interpretive registers are accessible, influencing whether teachers respond from reactive closure or reflective, perspective-rich engagement (Arnsten, 2009; Frenzel et al., 2018; Varela et al., 2017; Wink et al., 2021).

In this sense, multiple-perspective-taking supports an enacted form of professional agency that enables teachers to navigate complexity, suspend premature closure, and sustain pedagogical judgment within diverse and evolving pedagogical ecologies (Wang et al., 2024).

Theoretical Implications: Toward a Pedagogical–Ecological Understanding of Interpretive Agency

The Pedagogical–Ecological Interaction Schema (PEIS), elaborated in the design-based study, is introduced here as a synthesizing epistemic lens that emerged from integrating theoretical and empirical insights across the studies. In addition, the schema functioned within the design-based study as a reflective visualization to support inquiry into teachers' interpretive processes, thereby linking conceptual development and professional learning practice.

The PEIS conceptualizes pedagogical interactions as transactional systems in which cognition, emotion, and context mutually influence one another (Bronfenbrenner & Morris, 2007; Sameroff, 2009). Rather than depicting linear decision-making, the schema visualizes interpretive agency as emerging through recursive cycles of perception, reflection, and action within pedagogical ecologies. Interpretive frameworks function as semi-permeable filters that can become more flexible through multiple-perspective-taking (Fonagy et al., 2018).

Importantly, the PEIS does not operate as a prescriptive model but as an epistemic lens. It makes visible the relational and ecological dynamics through which interpretive agency is enacted and provides a conceptual space for reflection, dialogue, and further inquiry (Biesta, 2020; Edwards, 2010).

Within this framework, agency is understood as enacted rather than individual and volitional. It arises through the capacity to interpret, imagine alternatives, and act meaningfully within constraints (Biesta & Tedder, 2007; Turetsky et al., 2021). Multiple-perspective-taking thus functions as a generative mechanism through which interpretive and pedagogical agency can develop.

Strengths, Limitations, and Future Research

A strength of this research trajectory lies in its integrated and practice-based design. By combining a scoping review, cross-sectional content analysis, design-based inquiry, and practice-based evaluation, the studies provide insight into teachers' interpretive processes from multiple methodological angles. This combination made it possible to connect conceptual development, empirical description, and professional learning in practice while remaining close to the complexity of educational settings and ongoing pedagogical interaction.

As an exploratory and theory-generating research program grounded in design-based inquiry, this dissertation is subject to several methodological and contextual limitations. The scoping review was constrained by the limited and heterogeneous body of available studies, reflecting the still fragmented knowledge base on teachers' perspective-taking in relation to disruptive behavior. The cross-sectional study relied on teachers' written student reports, which provide insight into interpretive tendencies but do not capture how interpretive processes unfold over time or within ongoing pedagogical interaction. The design-based and evaluation studies were conducted within a single professional learning trajectory, which may limit the transferability of findings across educational contexts. In addition, these studies focused primarily on teachers' reported experiences and perceptions rather than direct observation of interpretive processes within classroom interaction.

The present research also could not fully capture the layered and temporal ways in which interpretive, relational, and attributional changes may develop within ongoing pedagogical interaction. While shifts in interpretive awareness and perceived self-efficacy became visible during the professional learning trajectory, relational dynamics and attributional patterns appeared more resistant to short-term change. Future longitudinal and design-based studies may therefore help clarify how interpretive, relational, and professional agency-related developments unfold and interact over time across diverse educational settings.

Although the studies were theoretically grounded in a pedagogical–ecological perspective, empirical attention focused primarily on teachers’ interpretive processes within classroom and professional learning contexts. Future research may further examine how institutional, organizational, and policy-related dynamics shape and constrain interpretive processes within broader pedagogical ecologies. Further refinement and application of the Pedagogical–Ecological Interaction Schema (PEIS) across educational contexts may deepen the understanding of how interpretive agency develops within diverse learning environments.

The findings also give rise to new questions that extend beyond the scope of the present studies and may offer important directions for future inquiry. Future research may further examine how engagement in multiple-perspective-taking relates to teachers’ emotional and physiological regulation during pedagogical interaction, and whether such processes may influence teachers’ capacity to co-regulate students’ emotional and behavioral responses. Additional research may also explore whether sustained engagement in multiple-perspective-taking relates to forms of cognitive flexibility, attentional regulation, and reflective responding that become observable within teachers’ instructional interactions and classroom practices.

Finally, future research may examine how multiple-perspective-taking functions across broader professional contexts involving children and youth, including educational leadership, youth care, and interdisciplinary collaboration. Because interpretive processes unfold within situated pedagogical ecologies, studying them requires approaches that generate knowledge with practitioners rather than only about them. Such collaboration remains essential for developing professional learning practices that are both theoretically grounded and responsive to the realities of educational work.

Conclusion

Across the four studies, teachers’ interpretive decision-making processes regarding challenging classroom behavior emerged as relational, embodied, and ecological processes shaped through ongoing interaction within pedagogical ecologies. Contemporary literature increasingly suggests that responding to the complexity of such pedagogical situations calls for engagement in multiple-perspective-taking. At the same time, how teachers develop and enact such perspective-taking processes in practice has remained insufficiently conceptualized and empirically underexplored.

The research trajectory showed that teachers' interpretations are often initially organized around their own perspectives and student-focused attributions, while also demonstrating that multiple-perspective-taking can be deliberately cultivated through sustained participation in a professional learning program centered on interpretation, dialogue, and reflection. The research trajectory therefore moved from identifying a fragmented and conceptually limited knowledge base toward the development and examination of a professional learning program focused on multiple-perspective-taking (CLIMB©). In doing so, multiple-perspective-taking was not only conceptualized as an epistemic and embodied professional practice, but also translated into the design and examination of professional learning within educational practice.

Shifts became visible in how teachers interpreted behavior, reflected on attributional processes, and perceived their professional capacity to respond to challenging pedagogical situations. Teachers described becoming more aware of their own interpretive frameworks and more open to alternative explanations and perspectives in understanding students' behavior. At the same time, relational and attributional patterns appeared more resistant to short-term change, indicating that interpretive, relational, and professional developments may unfold in layered and temporal ways rather than through immediate transformation.

The findings further highlight the complexity of teaching as a professional practice in which teachers continuously interpret behavior, negotiate relational dynamics, and make situated pedagogical judgments within diverse learning environments (Biesta, 2015). Rather than functioning as neutral observers of student behavior, teachers actively shape pedagogical interaction through the interpretive frameworks, attributions, and relational meanings they bring into everyday educational practice. In this sense, teachers' interpretations do not merely influence how behavior is understood but also shape the pedagogical possibilities that become visible and actionable within educational interaction.

Multiple-perspective-taking emerged not only as a discrete social-cognitive skill, but as an epistemic and embodied practice through which teachers learn to engage with uncertainty, difference, and contextual interdependence in pedagogical situations. Supporting teachers in developing interpretive awareness through multiple-perspective-taking may widen the pedagogical possibilities teachers perceive in responding to students' diverse developmental needs. In this way, multiple-perspective-taking may contribute to more reflective, relational, and

context-sensitive forms of pedagogical practice that support inclusive participation, engagement, and opportunities for development within diverse pedagogical ecologies.



Chapter 7

Epilogue

Learning environments are often described through observable behavior: what students do, how teachers respond, and which interventions are effective. Yet what becomes visible in such descriptions is only part of what is at stake. Behavior never presents itself independently. It is noticed, named, framed, and positioned. A gesture may be described as disruptive, challenging, anxious, resistant, or engaged, depending on who is looking and from which interpretive standpoint.

A teacher stands in the midst of a lesson with the challenge of offering a meaningful learning experience while interacting with students and sensing the atmosphere of the group. A student experiences the same moment from a different perspective, through a distinct lens of meaning. A colleague observing from outside may interpret the situation differently again. Policy language, institutional routines, and professional traditions each introduce their own interpretive vocabularies through which behavior becomes framed and understood. None of these perspectives are neutral. Pedagogical ecosystems take shape through ongoing interactions in which meanings, expectations, relationships, and responses are continuously interpreted, negotiated, and reshaped over time. These interactions shape students' developmental experiences and contribute to the interpretive frameworks through which students gradually come to understand how the world works and whether they see themselves as capable of acting within it.

One of the challenges of the human condition is that we experience our own interpretations as reality, making it difficult to recognize how we ourselves, in interaction with others and within broader ecological conditions, shape what we perceive and how we act. These interpretations do not emerge in isolation or in a single moment, but are shaped through prior experiences, relational histories, emotional memories, and earlier interactions that continue to influence how situations are perceived in the present. In educational practice, how adults interpret and respond to children and young people not only shape immediate interactions, but also contributes to how students come to understand themselves and their place in the world.

What becomes decisive in learning environments is therefore not observable behavior alone, but how behavior is interpreted from different interpretive perspectives within the unfolding interaction between students and the adults surrounding them. Professional practice within pedagogical ecosystems is shaped by theories, beliefs, emotions, institutional routines, and relational experiences that influence interpretations of behavior, attributions of responsibility, and the possibilities

perceived for pedagogical action. This shifts the focus of analysis: understanding learning environments requires attention to the interpretive processes through which professionals make sense of everyday events and respond to them in practice.

The research trajectory made visible how interpretations shape interaction within pedagogical ecosystems, and how professional learning may open space for alternative ways of understanding and responding. From this perspective, learning environments are not understood primarily as places where behavior should be managed, but as social environments in which interpretation, interaction, and perceived agency continuously shape students' experiences of learning and participation.

These dynamics are further articulated in the Pedagogical–Ecological Interaction Schema (PEIS), which shows how interpretation, affective regulation, professional efficacy, positioning, and interaction form an interconnected ecology in which professional action takes shape over time. From this perspective, educational practice is not only a matter of applying strategies or interventions. It involves an ongoing interpretive practice in which professionals remain attentive within unfolding interaction, consider multiple possible explanations, and respond in ways that address students' developmental needs.

Recognizing professional practice in this way challenges how educational professions are currently framed and supported. When policymakers, researchers, teacher educators, school leaders, and other professionals acknowledge the interpretive and relational complexity of pedagogical practice, professionals can be supported in developing their practice in its full pedagogical width. In this sense, the research presented in this dissertation also points toward a broader understanding of pedagogical professionalism itself. If the quality of interpretations shapes the pedagogical space in which students participate and develop, professional practice cannot be reduced to the implementation of methods or interventions alone. It is a complex relational practice that requires interpretive awareness, relational attunement, and pedagogical judgment.

These interpretive processes can be examined and supported through professional learning, where change does not follow a linear trajectory, but unfolds through shifts, through patterns that remain or change, and through developments that take shape within the broader ecology of learning environments. This challenges linear ways of understanding change in education that fail to account for the relational, interpretive, and context-dependent nature of pedagogical practice.

Particular attention is given to the role of multiple-perspective-taking in expanding interpretive frameworks and perceived possibilities for pedagogical action.

The research process itself unfolded within a similar ecology. Dialogue with supervisors, colleagues, practitioners, and students continually reshaped the questions asked and the interpretations considered. In this sense, the study of interpretation required ongoing interpretive practice. Researchers, too, participate in the pedagogical ecosystems they seek to understand. The questions they ask, the concepts they use, and the interpretations they foreground influence how educational realities are understood and discussed.

This creates a responsibility that reaches beyond methodological protocol. When research engages with educational practice, it inevitably participates in the interpretive spaces in which professionals make decisions about students' development. Researchers do not observe these processes from outside; they interpret educational practice through conceptual frameworks shaped by disciplinary traditions, cultural contexts, and professional histories. Translating research into educational practice therefore requires awareness of the reciprocal relationship between theory, practice, and the interpretive frameworks through which both are understood.

Questions of inclusion make this reciprocal relationship particularly visible, especially within educational contexts in which increasing diversity and heterogeneity challenge established ways of interpreting, organizing, and engaging with human differences. How behavior is framed, which explanations are foregrounded, and how responsibility is distributed are not merely descriptive acts. They contribute to the formation of learning environments in which interpretive possibilities may gradually narrow or expand students' opportunities for participation, recognition, and development.

From a pedagogical-ecological perspective, the work of educators, researchers, and other professionals involved in the lives of children and youth is therefore connected to a shared pedagogical responsibility: responding to students' developmental needs. In educational practice, this responsibility takes shape through everyday interactions between teachers, students, parents, school leaders, youth care professionals, and others who together form the pedagogical ecosystem surrounding the child. In research, this responsibility takes shape through sustained attention to the interpretive processes that influence these interactions and through efforts to make those processes visible and discussable.

These processes come into view when professionals engage in professional learning that cultivates multiple-perspective-taking, through which alternative interpretations and responses can emerge. In doing so, such professional learning can support educational practices in which inclusive and resilient learning environments emerge through the enacted interpretations and actions of the adults and students participating within them.

Understanding in this sense is never final. As interpretations evolve, new possibilities for pedagogical action emerge. Learning environments therefore remain places where professional judgment, relational awareness, and pedagogical responsibility are continuously enacted in response to students' developmental needs.

This makes the role of adults particularly consequential, as their interpretations and responses shape how students are positioned and how they learn to engage with themselves, others, and the situations they encounter.

Expanding interpretive awareness may widen the possibilities professionals perceive in responding to students, thereby contributing to learning environments in which students with different characteristics, experiences, and histories can participate, develop, and experience themselves as welcome and capable of remaining engaged in the face of challenge and uncertainty.

Within pedagogical ecosystems, learning environments take shape through the ongoing interplay of interpretation and interaction. In these encounters, teachers, students, parents, school leaders, policymakers, youth care professionals, and other actors continually interpret one another's actions and, in doing so, shape participation and development. These interactions unfold within a living ecology in which interpretations, relationships, expectations, and responses gradually become intertwined and reinforced over time. The work of education therefore lies not only in responding to behavior, but in cultivating the interpretive awareness that keeps pedagogical possibilities open.

When situations are approached through multiple-perspective-taking, what becomes possible is not simply better understanding, but a widening of the pedagogical space in which alternative interpretations, relationships, and possibilities for participation may remain open within the ongoing complexity of educational life.



Summary

Challenging classroom behavior is a persistent and demanding issue in educational practice. Such situations may affect students' opportunities to participate and develop within learning environments and place considerable pressure on teachers, who often report feeling insufficiently equipped to navigate complex behavioral dynamics. In practice, challenging behavior is frequently approached as a problem located within the student, yet how such behavior is interpreted plays a crucial role in shaping pedagogical interactions and the possibilities teachers perceive. Challenging behavior takes on meaning through teachers' interpretive processes within pedagogical interaction, as a relational and context-dependent phenomenon. It is therefore important to attend to how teachers engage in multiple-perspective-taking in professional educational situations, as these interpretive processes shape how they perceive, evaluate, and respond in practice.

Classroom interaction depends not only on what students do, but also on how teachers interpret pedagogical situations and respond to them in practice. The research trajectory brings together four studies that examine teachers' interpretive decision-making processes and how they can shift through multiple-perspective-taking within pedagogical–ecological learning environments. Situations involving challenging student behavior make teachers' interpretive processes particularly visible and therefore provide a useful empirical context for studying interpretive decision-making.

The central research question guiding this dissertation is:

Can teachers' interpretive decision-making processes regarding challenging classroom behavior shift through multiple-perspective-taking within pedagogical–ecological learning environments?

Situations that teachers experience as disruptive are likely to intensify interpretive demands and therefore provide a particularly relevant context for examining how teachers construct meaning and respond in practice. In this research, teachers were asked to select students whose behavior they experienced as disruptive in the classroom. The focus of this selection was not on establishing whether behavior was objectively disruptive, but on how it was experienced and interpreted by teachers in context.

To address this question, four studies were conducted, each examining a different aspect of teachers' interpretive processes in classroom interaction.

In the first study, empirical research on teachers' perspective-taking in relation to disruptive classroom behavior was reviewed through a scoping review methodology. A systematic search across four databases identified 1,791 records, of which six studies met the inclusion criteria. The review revealed that only a small number of empirical studies have examined teachers' perspective-taking in relation to disruptive classroom behavior. Existing studies predominantly focus on teachers taking a single perspective—five studies focus on the student perspective and one on that of the parents. As a result, little empirical attention has been paid to how teachers interpret and make sense of disruptive classroom behavior within complex educational situations. These findings reveal both a conceptual and empirical gap and point to the importance of examining how teachers interpret behavior from multiple perspectives.

In the second study, teachers' written student reports were analyzed to examine how teachers engaged in multiple-perspective-taking when interpreting disruptive classroom behavior. Content analysis of 80 reports written by 41 teachers revealed patterns in teachers' use of multiple-perspective-taking and attributional reasoning. The results showed that teachers predominantly interpreted behavior from their own interpretive perspective, with responsibility for change mainly attributed to the student. Although alternative explanations were occasionally mentioned, multiple-perspective-taking appeared only sporadically in the reports. The results also indicated a limited broadening of perspectives in some reports; however, this broadening did not consistently lead to more integrated or relational interpretations. These findings indicate that teachers tend to emphasize explanations focused primarily on the student, rather than contextual or interactional factors, thereby constraining their interpretive decision-making and the pedagogical possibilities they perceive.

The third study examined whether professional learning can support teachers in enriching their interpretive frameworks. Building on insights from the previous studies, a professional learning program was co-designed using a design-based research approach to cultivate multiple-perspective-taking as an epistemic and embodied competence. Thirty teachers participated in a seven-month professional learning program involving approximately 56 hours of professional learning activities, including collective learning sessions and practice-based inquiry assignments. The program engaged teachers in dialogical inquiry, systemic analysis, and

embodied reflection. The findings suggest that participation in these learning processes was associated with shifts in teachers' interpretive stance, increased attributional awareness, and a stronger sense of professional agency, alongside deeper relational awareness in their interactions with students.

The fourth study examined whether participation in the professional learning program is associated with changes in teachers' evaluations of student behavior, their perceived professional self-efficacy, and their perceptions of the teacher-student relationship. A pre-post design was used with 29 teachers reporting on 57 teacher-student dyads. The results indicated that teachers reported higher self-efficacy and evaluated student behavior more positively after participation in the program. At the same time, teachers perceived the quality of the teacher-student relationship more critically, with decreases in perceived closeness and increases in perceived dependency. Meanwhile, the structure of teachers' written student reports showed little change. These findings suggest that shifts in interpretation and self-efficacy became visible after participation in the program, whereas relational perceptions and reporting practices appeared more stable in the short term. The results nevertheless indicate shifts in teachers' interpretive frameworks and in the pedagogical possibilities they perceive in their interactions with students.

Taken together, the studies show that interpretation plays a central role in how teachers perceive and attribute meaning to student behavior. Teachers' interpretations are key in shaping the distribution of responsibility, the positioning of students within classroom interaction, and the pedagogical possibilities that become visible. When teachers learn to consider multiple possible explanations and perspectives, their interpretive space may expand, enabling them to respond to classroom situations with a stronger sense of professional agency. The observed enrichment of perspectives can be understood as part of a broader shift in teachers' interpretive processes toward more relational, contextual, and reflexive ways of making sense of classroom behavior. These shifts in interpretation are reflected in teachers' reported sense of enacted agency, as changes in how situations are understood can expand teachers' perceived possibilities for pedagogical action.

From a pedagogical-ecological perspective, classroom interaction can be understood as a dynamic ecology in which interpretation, emotional regulation, attribution processes, and interaction patterns mutually influence one another over time. The Pedagogical-Ecological Interaction Schema (PEIS) synthesizes these dynamics by conceptualizing how teachers' interpretive frameworks are embedded within this broader ecology of classroom interaction.

These studies contribute to research on pedagogical interaction by conceptualizing interpretation as a constitutive process in pedagogical action and by examining how multiple-perspective-taking is associated with shifts in and expansion of teachers' interpretive space within pedagogical–ecological contexts. Because classroom interaction unfolds within a biopsychosocial and pedagogical ecology shaped by layered interactions among students, teachers, peers, families, and institutional contexts, teachers inevitably encounter situations in which multiple explanations and perspectives coexist. Multiple-perspective-taking can therefore be understood as an important epistemic practice for navigating this complexity. The findings indicate that professional learning can support such shifts by engaging teachers in dialogical inquiry, systemic reflection, and embodied exploration of pedagogical situations.

Within educational contexts concerned with inclusion, these insights are particularly relevant. The way behavior is interpreted influences which students are perceived as problematic, how responsibility is distributed, and which opportunities for participation and development become visible. Supporting teachers in engaging with multiple perspectives may therefore contribute to learning environments in which more students can participate, develop, and experience resilience.

As an exploratory and practice-based research program, this dissertation provides insight into how teachers' interpretive processes may shift within specific pedagogical contexts. However, these findings should be understood in relation to the temporal scope of the studies. While shifts in interpretation and self-efficacy became visible within the duration of the learning program, other domains, such as teacher–student relationships and reporting practices, appeared to develop at a different pace. This suggests that interpretive change unfolds unevenly across domains and may require sustained engagement over time to become more fully integrated in practice.

Future research may further examine how teachers' interpretive processes develop in pedagogical interaction over time and how they relate to teachers' capacity to support students' participation, regulation, and development within diverse learning environments, particularly through longitudinal research designs that can capture how these processes evolve and stabilize over time.

Samenvatting

Navigeren in interpretatieprocessen binnen pedagogische ecosystemen

Meervoudig perspectief nemen in de interpretatie van uitdagend gedrag door leraren

In het onderwijs doen zich dagelijks situaties voor waarin gedrag van leerlingen het lesgeven en leren onder druk zet. Een leerling beweegt onrustig door de klas, reageert niet op een instructie, stoort anderen of trekt zich terug. Zulke momenten vragen om een reactie, maar brengen ook spanning met zich mee. Leraren geven aan dat juist dit soort situaties een groot beroep doen op hun professionele oordeel, hun gevoel van competentie en hun vermogen om het overzicht te bewaren. Wanneer gedrag als moeilijk te begrijpen of te beïnvloeden wordt ervaren, kan dat leiden tot onzekerheid, stress en een afname van ervaren handelingsruimte.

Gedrag krijgt betekenis in de manier waarop het in interactie wordt waargenomen en geïnterpreteerd. Hoe leraren gedrag interpreteren, bepaalt welke pedagogische ruimte er ontstaat voor leerlingen en voor henzelf.

Eenzelfde handeling kan verschillende betekenissen krijgen. Wat de ene leraar ziet als opstandigheid, kan een ander begrijpen als spanning, onzekerheid of overprikkeling. Die interpretatie is niet neutraal. Zij beïnvloedt hoe verantwoordelijkheid wordt verdeeld, welke mogelijkheden voor handelen zichtbaar worden en hoe de relatie met de leerling zich ontwikkelt.

Vanuit deze pedagogische werkelijkheid onderzoeken de vier studies in dit proefschrift hoe leraren gedrag interpreteren in complexe onderwijssituaties en hoe interpretatieve besluitvormingsprocessen kunnen verschuiven wanneer leraren leren om meerdere perspectieven mee te nemen in hun interpretatie van situaties.

In veel onderwijspraktijken wordt lastig gedrag nog vaak vooral begrepen vanuit kenmerken van de leerling. Situaties waarin gedrag spanning oproept en de pedagogische interactie onder druk zet, kunnen ertoe leiden dat interpretaties zich gemakkelijker vernauwen en de ervaren handelingsruimte kleiner wordt. Wanneer gedrag voornamelijk wordt geïnterpreteerd vanuit kenmerken van de leerling, neemt de kans toe dat situaties sneller worden vastgezet in probleemdefinities en

dat de verantwoordelijkheid eenzijdig bij de leerling wordt gelegd. Dit kan leiden tot minder ruimte voor afstemming, een toename van corrigerende of uitsluitende reacties en uiteindelijk tot het versterken van bestaande ongelijkheden in deelname en ontwikkelingskansen.

Gedrag wordt benaderd als een relationeel en contextueel verschijnsel dat betekenis krijgt binnen een pedagogisch ecosysteem (Figuur 1, hoofdstuk 5). Dit ecosysteem omvat het geheel van interacties, interpretaties, verwachtingen, emoties en omstandigheden waarin leerlingen, leraren, ouders, klasgenoten, collega's en andere betrokkenen op elkaar inwerken. Leraren staan daar niet buiten, maar maken er zelf deel van uit en geven deze context mede vorm. Hun waarnemingen, emoties en verwachtingen beïnvloeden wat zij zien, welke handelingsmogelijkheden zij herkennen en welke ontwikkelkansen voor leerlingen zichtbaar worden.

De centrale vraag luidt:

Kunnen interpretatieve besluitvormingsprocessen van leraren rond uitdagend gedrag in de klas verschuiven door meervoudig perspectief te nemen binnen pedagogisch-ecologische leeromgevingen?

Waarnemen, interpreteren en handelen zijn voortdurend met elkaar verweven in een betekenisgevend proces waarin gedrag wordt begrepen en verklaard. In die betekenisgeving spelen overtuigingen, eerdere ervaringen, emotionele triggers en de bredere context mee. Dit proces voltrekt zich niet alleen op cognitief niveau, maar ook in hoe leraren fysiek en emotioneel reageren op situaties, bijvoorbeeld in spanning, alertheid of juist rust. Deze toestanden sturen mede wat opvalt, welke verklaringen aannemelijk lijken en hoe wordt gehandeld.

Meervoudig perspectief nemen wordt daarbij opgevat als een professionele kerncompetentie. Het gaat niet om het naast elkaar zetten van standpunten, maar om het onderzoeken van pedagogische situaties vanuit meerdere mogelijke verklaringen en perspectieven, waaronder die van de leerling, de leraar, ouders, klasgenoten, collega's en de bredere school- en ondersteuningscontext. Daarbij wordt ook het eigen perspectief van de leraar onderzocht. Eerste interpretaties worden niet als vanzelfsprekend juist beschouwd, maar als voorlopige werkhypothesen die in de praktijk getoetst en bijgesteld kunnen worden. Divergentie is daarbij geen probleem dat zo snel mogelijk moet worden opgelost, maar een voorwaarde voor zorgvuldig pedagogisch oordelen. Dit vraagt van leraren dat zij in complexe situaties leren om hun eerste interpretaties te vertragen en te blijven onderzoeken wat er mogelijk speelt.

Meervoudig perspectief nemen verrijkt het interpretatiekader van leraren en maakt nieuwe pedagogische mogelijkheden zichtbaar.

Niet het gedrag zelf, maar de interpretatie ervan bepaalt de pedagogische ruimte die ontstaat.

Die ruimte maakt het mogelijk om afwegingen te maken die recht doen aan wat leerlingen nodig hebben om zich te ontwikkelen, deel te nemen aan de interactie en als persoon zichtbaar te worden.

Voor de studies in dit proefschrift werden leraren gevraagd leerlingen te selecteren van wie zij het gedrag in de klas als problematisch ervoeren. Juist situaties die leraren als problematisch ervaren, maken interpretatie, betekenisgeving en pedagogische afwegingen bepalender voor hoe wordt gehandeld. Het onderzoek richtte zich daarbij niet op de vraag of gedrag objectief problematisch was. De focus lag op hoe gedrag door leraren werd waargenomen, geïnterpreteerd en betekenis kreeg binnen pedagogische interacties.

Vier studies brengen deze processen in kaart.

De eerste studie bestond uit een scoping review waarin via een systematische zoekstrategie in vier wetenschappelijke databanken werd onderzocht hoe leraren perspectief nemen bij uitdagend gedrag. Van de 1.791 gevonden publicaties voldeden uiteindelijk zes empirische studies aan de inclusiecriteria. De review liet zien dat onderzoek naar perspectief nemen door leraren bij uitdagend gedrag schaars en fragmentarisch is. De geïnccludeerde studies gaven wel aanwijzingen dat perspectief nemen samenhangt met positievere leraar-leerlingrelaties, meer ervaren competentie in het omgaan met moeilijk gedrag, minder emotionele overbelasting bij leraren en minder uitsluitende reacties op gedrag, zoals schorsingen. Ook lieten de studies aanwijzingen zien dat perspectief nemen ontwikkeld kan worden. Tegelijkertijd richtten de geïnccludeerde studies zich vrijwel uitsluitend op één vooraf bepaald perspectief, meestal dat van de leerling. Hoe leraren in complexe pedagogische situaties daadwerkelijk tussen verschillende perspectieven bewegen en deze integreren in hun interpretatie en besluitvorming bleef grotendeels onbeantwoord.

De tweede studie richtte zich daarom op de vraag hoe leraren in de praktijk betekenis geven aan uitdagend gedrag in situaties waarin ondersteuning en besluitvorming nodig zijn. Via contentanalyse werden 80 ontwikkelingsperspectiefplannen van 41 leraren onderzocht. De analyses laten zien dat interpretaties overwegend

vertrekken vanuit het perspectief van de leraar, waarbij probleemgedrag vooral wordt toegeschreven aan belemmerende kenmerken van de leerling. Andere perspectieven, zoals die van ouders, klasgenoten of de bredere onderwijscontext, werden wel genoemd, maar zelden geïntegreerd in de kern van de interpretatie. Hierdoor bleven verklaringen vaak sterk gericht op de leerling zelf. De studie laat daarmee zien dat meervoudig perspectief nemen geen vanzelfsprekend onderdeel is van interpretatieve besluitvorming, juist niet in pedagogische situaties die als complex of lastig worden ervaren.

De derde studie ontstond vanuit de vraag hoe leraren ondersteund kunnen worden in het leren werken met meervoudig perspectief nemen in situaties rond uitdagend gedrag. Op basis van de eerdere studies werd het CLIMB®-leerprogramma via ontwerponderzoek ontwikkeld en uitgevoerd (in Nederland bekend als WegWijsinGedrag®). Gedurende zeven maanden namen 30 leraren deel aan een blended leertraject van ongeveer 56 uur, waarin zij werkten met praktijkcasussen, dialogisch onderzoek, systemische analyse en belichaamde reflectie. Door herhaald te oefenen in concrete pedagogische situaties werden interpretaties op verschillende niveaus en in samenhang met de bredere pedagogische context expliciet gemaakt, bevraagd en opnieuw overwogen. Deelnemers beschrijven verschuivingen in hun interpretatiekader, meer ruimte voor alternatieve verklaringen, een breder handelingsrepertoire en een versterkt gevoel van professionele agency.

De vierde studie onderzocht welke veranderingen zichtbaar werden voor en na de leergang meervoudig perspectief nemen. Negenentwintig leraren rapporteerden daarbij over 57 leraar-leerlingrelaties. Leraren rapporteerden na de leergang meer self-efficacy in het omgaan met uitdagend gedrag en beoordeelden het gedrag van leerlingen positiever, met minder gerapporteerd probleemgedrag en meer sociaal gedrag. Tegelijkertijd keken zij ook anders naar de relatie met leerlingen. Zij rapporteerden minder ervaren nabijheid en meer zicht op afhankelijkheid in de relatie. Schriftelijke manieren van rapporteren bleven daarbij relatief stabiel.

De bevindingen laten zien dat veranderingen in interpretatie, geloof in eigen kunnen (self-efficacy) en relationele waarneming zich niet gelijktijdig ontwikkelen. Terwijl leraren relatief snel anders naar gedrag en pedagogische situaties gingen kijken, bleken relationele patronen en manieren van rapporteren minder snel te veranderen. Verandering verschijnt daarmee niet als een lineair proces, maar als een ontwikkeling waarin verschillende aspecten van professioneel handelen zich in verschillend tempo en op gelaagde wijze kunnen ontwikkelen.

Gezamenlijk laten de studies zien dat veranderingen in interpretatie samenhangen met veranderingen in handelen, relaties en pedagogische afwegingen. Interpretatie verschijnt daarmee niet als bijproduct van handelen, maar als bepalende factor in wat in pedagogische situaties mogelijk wordt. Hoe gedrag wordt begrepen, werkt door in hoe situaties worden waargenomen, welke verklaringen dominant worden en welke pedagogische mogelijkheden zichtbaar blijven of juist verdwijnen. Vernauwde interpretaties vergroten de kans op reactieve en corrigerende reacties, terwijl bredere interpretatieve ruimte meer relationele en contextgevoelige handelingsmogelijkheden zichtbaar maakt.

Deze inzichten leiden tot een verschuiving in hoe pedagogisch handelen kan worden begrepen. Lesgeven verschijnt niet als het toepassen van technieken op gedrag, maar als een interpretatieve praktijk waarin waarnemen, voelen, denken en handelen met elkaar verweven zijn. Professionele handelingsruimte ontstaat niet alleen uit kennis of interventies, maar uit de manier waarop situaties worden geïnterpreteerd.

Professionele agency is geen vooraf gegeven eigenschap of voornemen, maar krijgt vorm in de manier waarop leraren situaties waarnemen, interpreteren en welke handelingsmogelijkheden zij daarin zien.

Deze interpretatieve processen staan niet op zichzelf, maar maken deel uit van een dynamisch geheel waarin cognitieve, emotionele, relationele en contextuele processen voortdurend op elkaar inwerken. In dit onderzoek wordt dit samengebracht in het Pedagogical-Ecological Interaction Schema (PEIS: figuur 1, hoofdstuk 4). Dit schema laat zien dat pedagogisch handelen niet voortkomt uit losse beslissingen, maar uit een voortdurende wisselwerking tussen waarnemen, voelen, interpreteren en handelen binnen een bredere biopsychosociale en ecologische context.

Waar veel benaderingen van gedrag zich richten op kenmerken van leerlingen of op effectieve interventies, wordt hier zichtbaar dat de interpretatieve processen van leraren zelf een cruciale, maar vaak onderbelichte rol spelen. Daarmee verschuift de focus van gedrag als object van interventie naar interpretatie als de kern van pedagogisch handelen. Dit raakt ook aan bredere vraagstukken rond inclusie en gelijke kansen, omdat interpretaties mede bepalen welke leerlingen als passend, problematisch of ondersteuningsbehoefstig worden gezien. Beleid dat zich uitsluitend richt op kennis en handelingsrepertoires mist een cruciale dimensie: de interpretatieve kwaliteit van professioneel oordelen. Juist in de dagelijkse pedagogische

praktijk, waar situaties zich voortdurend ontwikkelen en onder druk staan, wordt zichtbaar of die kwaliteit aanwezig is.

Tegelijkertijd roept dit nieuwe vragen op. Hoe ontwikkelen interpretatieve processen zich over langere tijd? Hoe verhouden veranderingen in interpretatie zich tot veranderingen in relaties en pedagogisch handelen? En hoe kunnen professionele leeromgevingen zo worden ingericht dat leraren duurzaam worden ondersteund in het omgaan met complexe pedagogische situaties, waarbij erkend wordt dat pedagogisch handelen en professionele ontwikkeling zich niet lineair ontwikkelen? Daarvoor zijn met name langdurige en praktijkgerichte studies nodig om deze vragen te verdiepen.

Het omgaan met gedrag is daarmee niet alleen een individuele verantwoordelijkheid van leraren, maar een gezamenlijke opgave binnen het pedagogisch ecosysteem, waarin leraren, teams, schoolorganisaties en bestuurlijke contexten met elkaar verbonden zijn.

Pedagogisch handelen is in essentie een interpretatieve praktijk, waarin meervoudig perspectief nemen zichtbaar maakt welke mogelijkheden er voor leerlingen ontstaan en hoe verschillen in perspectieven binnen het pedagogisch ecosysteem niet worden gladgestreken, maar als bron voor hun ontwikkeling worden benut, zeker wanneer situaties onder druk staan.

Juist in de manier waarop gedrag wordt geïnterpreteerd, wordt zichtbaar welke pedagogische mogelijkheden binnen onderwijs open blijven of juist verdwijnen.

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Research Data Management

The data used in this dissertation were collected within an NRO-funded research project (project number 40.5.19630.067), in which Oberon BV (Utrecht, the Netherlands) acted as the grant-holding research partner and was responsible for research governance, data management, and secure data storage. The dissertation includes both qualitative and quantitative data collected in educational settings involving teachers and, indirectly, contextual information concerning students and classroom interactions.

The studies included in this dissertation were conducted within the doctoral research framework of Radboud University. The research focused on professional learning, teacher interpretation, and pedagogical interaction within educational settings and did not involve medical interventions, physical procedures, or experimental manipulations falling under the Dutch Medical Research Involving Human Subjects Act (WMO). Therefore, no approval under the WMO framework was required. The studies were conducted in accordance with the guidelines of the Donders Institute for Brain, Cognition and Behaviour and the principles of the Declaration of Helsinki.

All participants provided informed consent for participation and processing of the research data within the NRO-funded project. Procedures for participation, privacy, and data processing were organized in collaboration with participating schools and the grant-holding research partner Oberon BV, in accordance with applicable privacy regulations and institutional agreements. Where student-related contextual information or educational reports concerning minors were included in research materials, written parental consent procedures were organized through participating schools in collaboration with Oberon BV.

All data were pseudonymized prior to analysis. The pseudonymization key was stored separately from the research data and access to identifiable information was restricted to authorized project members in accordance with applicable privacy legislation and consortium agreements. Data were stored on secure servers and protected digital environments used by Oberon and consortium partners, following GDPR/AVG regulations and institutional data security procedures. Backups were performed through secured server infrastructures located within Western Europe. The original NRO data management plan specified that quantitative analysis files and accompanying syntax files could, where sufficiently anonymized and suitable

for reuse, be archived through DANS following completion of the project and after an embargo period related to consortium publications. Metadata, syntax files, methodological documentation, and codebooks may be added to support transparency and potential reuse of quantitative materials. However, due to the sensitive and context-dependent nature of the qualitative data collected in educational settings, including reflective teacher materials and descriptions of classroom situations, full anonymization without risk of indirect identification may not be feasible. For this reason, raw qualitative data are not publicly available.

Access to data is therefore restricted and may only be considered under strict conditions, subject to approval by the responsible research organization, existing consortium agreements, ethical and legal requirements, and assessment of privacy risks for participants and educational contexts. Data are retained in accordance with applicable Dutch legal and institutional retention requirements.

Further details regarding data collection, participant procedures, materials, and analytical approaches are provided in the individual research chapters of this dissertation.

Appendix A

Glossary of Key Concepts

The concepts in this glossary together describe the interpretive processes through which teachers make sense of pedagogical situations as they are enacted within pedagogical ecosystems and how multiple-perspective-taking can enrich their interpretive frameworks and professional agency.

Epistemic Practices

Epistemic practices refer to the ways professionals construct, examine, and revise interpretations and informed judgments that guide their actions in complex pedagogical contexts. In this dissertation, such practices operate at the level of interpretation and attribution, enabling teachers to engage with uncertainty and to connect observation, explanation, and action in pedagogical situations.

Interpretive Decision-Making

Interpretive decision-making refers to the dynamic process through which teachers perceive, interpret, and determine how to respond pedagogically. Within this process, teachers' beliefs, norms, emotions, attribution patterns, and prior experiences influence how behavior is understood and which pedagogical responses are considered possible. Rather than a purely cognitive act, interpretive decision-making unfolds within the relational and contextual dynamics of pedagogical interaction.

Interpretive Frameworks

Interpretive frameworks refer to the underlying beliefs, expectations, professional scripts, and attribution patterns that shape how teachers perceive pedagogical situations. These frameworks function as lenses that filter perception and shape how behavior is interpreted, where responsibility is located, and which pedagogical possibilities teachers may perceive as feasible within pedagogical interaction.

Interpretive Space

Interpretive space refers to the range of explanations and perspectives teachers consider when interpreting educational situations. When interpretive space narrows, behavior tends to be explained through limited or student-centered attributions. When interpretive space broadens, teachers become more open to contextual, relational, and interactional explanations of behavior.

Multiple-Perspective-Taking

Multiple-perspective-taking refers to the professional practice of deliberately considering how pedagogical situations within pedagogical ecosystems may be understood from multiple interpretive standpoints. This includes the perspectives of students, teachers, peers, parents, and the broader contextual conditions in which interaction unfolds. In this dissertation, multiple-perspective-taking is conceptualized as an epistemic, relational, and embodied practice through which teachers generate and examine alternative explanations of behavior and enrich their interpretive frameworks.

Pedagogical Ecosystem

A pedagogical ecosystem refers to the dynamic network of interactions among students, teachers, peers, families, institutional structures, and broader socio-cultural contexts through which pedagogical situations and learning environments are continuously shaped. Within this ecosystem, interpretations, emotions, relationships, and contextual conditions recursively influence one another and shape how pedagogical situations are understood, enacted, and responded to. Pedagogical ecosystems extend beyond classroom interaction alone and include the broader ecological conditions through which pedagogical situations are interpreted, enacted, and responded to in educational practice.

Pedagogical–Ecological Interaction Schema (PEIS)

The Pedagogical–Ecological Interaction Schema (PEIS) is a conceptual visualization developed within this research trajectory to represent the dynamic interaction among interpretive, emotional, relational, and contextual processes in pedagogical situations. The schema illustrates how teachers' interpretive decision-making processes are enacted within recursive pedagogical interactions shaped by broader ecological conditions. PEIS functions as a reflective and analytical tool for understanding how interpretations, attributions, emotions, self-efficacy, and contextual dynamics interact in shaping pedagogical responses, possibilities for action, and professional agency. It also forms the conceptual foundation for the design and operationalization of the CLIMB© professional learning program. For a detailed description of the schema, its components, and developmental trajectories, see Chapter 4.

Professional Agency

Professional agency refers to the capacity of teachers to act meaningfully and responsively within pedagogical situations. In this dissertation, agency is understood as enacted within relational and contextual dynamics rather than residing

solely in individual decision-making. Through processes such as multiple-perspective-taking, teachers may expand their interpretive awareness and strengthen their sense of agency in responding to complex pedagogical situations.

Together, these concepts describe how teachers' interpretations of pedagogical situations are shaped within pedagogical ecosystems. Interpretive frameworks guide how teachers perceive and make sense of situations, while interpretive decision-making reflects the ongoing process through which teachers determine how to respond pedagogically. Multiple-perspective-taking functions as a central epistemic practice that can enrich teachers' interpretive space by enabling consideration of alternative perspectives and contextual influences. Through this process, teachers may strengthen their professional agency and act more responsively within complex pedagogical interactions.

Acknowledgments

Research is never an individual endeavor. It is built in interaction, shaped through dialogue, and carried forward in collaboration. I sometimes say, half in jest, that $1 + 1$ equals 11 . Not because the numbers change, but because something happens in the interaction itself: when perspectives meet, they do not simply add up; they transform and amplify what becomes possible. This dissertation is the result of such encounters.

I would first like to thank the teachers, school leaders, school boards, and professionals from partnerships who opened their practice to this research. Your willingness to reflect, to question, and to engage with complexity made this work possible. I am especially grateful to the communities of SWV PPO-NK and SWV IJmond, where this work took shape in close collaboration with schools and their teams. I would like to acknowledge the school boards and their leadership, including Peter Truijens, for their trust and commitment to this work. I would also like to thank Helma van der Hoorn and Marianne Volp-Kortenhorst for their support and trust during this process. It was in these contexts that the questions of this dissertation became real and urgent.

This research originated within a broader collaboration. NRO and NWO created space for research grounded in questions emerging from educational practice and broader societal challenges. Their support made it possible not only to carry out this research trajectory, but also to develop continuing and new lines of inquiry together with schools, researchers, and professionals across different domains.

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The development of the professional learning program and the research that accompanied it was a collective effort. I would like to thank Femmy Wolthuis, Sander Galjaard, Caroline Kooistra, and Hans Schuman for their contributions to the co-design and refinement of the program. I am also grateful to Linda Maan for

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I am especially grateful to the specialists of WegWijsinGedrag and to all participants in the professional learning programs. Your stories, questions, and experiences did not only inform this research, they gave it direction. They challenged and extended it. In these interactions, the work gained depth and further development. It is here that multiple-perspective-taking became more than a theoretical idea and developed into a lived professional practice in context. This is what I describe as a pedagogical ecosystem: a space in which meaning, relationships, and action continuously emerge in interaction.

Several students contributed to the analytical work of this research. I would like to thank Pien Verhees, Lynn van Kasteren, Anouk Moreau, Tessa Peerdeman, Marijn Vleeskens, and Aafke Essen for their careful coding and analytical contributions. Aafke Essen, in particular, provided extensive support in statistical analyses. I am also grateful to Thomas Pelgrim for his support in developing the search strategy for the scoping review, and to Lidwien Ottenheim for her role as second reviewer in the screening process.

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My supervisory team has been central to this journey. Within this team, I was also a student. I learned, questioned, and was challenged. It has been a rich and formative experience, and the conversations have become deeply meaningful to me, as have the people themselves.

With Wouter Staal, the collaboration started from the very first conversation with a shared curiosity, but also a shared concern: how can we better understand what

is needed to strengthen children and young people, and to prevent them from falling through the cracks? That question became a driving force throughout this dissertation. Our collaboration has developed over many years. Thinking together became a shared way of working. We explored what did not yet make sense and stayed with moments where practice seemed to get stuck. He was closely involved from the early stages of this work, including the development of the research proposal and presentations within the NRO project. In these collaborations, thinking together became visible, in a dynamic and ongoing dialogue where theory and practice continuously informed, challenged, and reshaped one another.

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Marion van Hattum, your attention to detail and your ability to connect educational and youth care perspectives enriched this work and strengthened its grounding across domains. Our conversations often continued beyond formal settings, creating space to explore the broader context of multiple-perspective-taking and how it becomes visible in practice.

Together, this team embodied what it means to think across perspectives and disciplinary boundaries. Coming from different professional and disciplinary backgrounds also meant that we could not assume we understood concepts, language, or interpretations in the same way. We were repeatedly challenged to make explicit what we meant, how we understood certain concepts, and which assumptions were embedded in our thinking. In this ongoing process of questioning, clarifying, and perspective-taking, the theoretical foundation of this work became stronger. At the same time, we gradually developed a shared developmental language: language that helped us not only to think together, but also to hear and understand one another across perspectives.

Many others have contributed to the development of this work through questions, reflections, and encounters that proved to be decisive. Moments of friction and unexpected questions opened up new directions and helped to clarify what this research contributes to pedagogy.

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This dissertation is written for something beyond itself: for educational practice, for stronger pedagogical communities, and for future generations of children and young people. It is in these shared efforts that research finds its meaning.

Meaning emerges in interaction.

If this dissertation shows anything, it is that in educational practice, as in research, $1 + 1$ rarely equals 2. In interaction, it can become 11.



About the author

Astrid Ottenheym-Vliegen worked in a variety of roles across education, healthcare, and educational governance. She began her professional career in nursing and later worked as a teacher, school leader, and director within inclusive and special education contexts. Rather than following a predetermined career path, her professional and academic development evolved through continued engagement with complex human situations that repeatedly raised new questions, perspectives, and layers of understanding.

Across these different environments, a continuing thread in her work was an enduring interest in how people interpret behavior, difference, and complexity, and how these interpretations influence relationships, decision-making, and the environments in which people learn, work, and live together. Alongside her professional work, she continued studying throughout her career in an ongoing effort to better understand the relational, pedagogical, organizational, and societal dimensions of human interaction.

Since 2020, she has connected these practice-based and systemic experiences with scientific research as a PhD candidate at the Donders Institute for Brain, Cognition and Behaviour of Radboud University. Her research focuses on teachers' interpretive processes regarding disruptive classroom behavior and on the role of multiple-perspective-taking in pedagogical decision-making within educational contexts. During her PhD trajectory, she further developed her academic skills through training in scientific integrity and academic writing, and through participation in graduate school days and research meetings.

Alongside her PhD research, she played a leading role in several nationally funded and competitively awarded research projects in the Netherlands on inclusion, perspective-taking, and pedagogical collaboration. These include the NRO-funded projects "Teachers' Perspective Shifts in Responding to Student Behavior" (Perspectiefwisseling van leerkrachten in het omgaan met leerlinggedrag; 2020–2023; project number 40.5.19630.067) and "Inclusive Mindset Through Multiple-Perspective-Taking in Teaching Children With and Without Special Educational Needs in Secondary Schools" (Inclusieve mindset door meervoudig perspectiefnemen van leraren in het vo-vso; 2025–2029; project number 40.5.24942.117). Earlier in her career, she received the MLE Award from Prof. Dr. Eric Verbiest for her practice-based research conducted within the Master Leadership in Education program.

She also serves as co-lead of a work package within the NWO consortium STRONGER2GETHER, which focuses on strengthening social relationships and well-being among young people. In addition, she contributes as an advisor to research initiatives on neuro-inclusive collaboration and participation, including the project CO-INTEND: CO-design of Interaction Technologies Embracing Neuro-Inclusive Dynamics.

Her work moves between science, professional practice, and societal questions surrounding inclusion, professional agency, and the pedagogical ecologies in which children, professionals, organizations, and families interact. A characteristic of her approach is the connection between scientific reflection and the everyday realities of pedagogical practice. Across these contexts, she is particularly interested in how space for shared understanding, reflection, and action can emerge within complex human situations.

List of publications

Scientific Publications and Presentations

(excluding publications included in this dissertation)

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Donders Graduate School

For a successful research Institute, it is vital to train the next generation of scientists. To achieve this goal, the Donders Institute for Brain, Cognition and Behaviour established the Donders Graduate School in 2009. The mission of the Donders Graduate School is to guide our graduates to become skilled academics who are equipped for a wide range of professions. To achieve this, we do our utmost to ensure that our PhD candidates receive support and supervision of the highest quality.

Since 2009, the Donders Graduate School has grown into a vibrant community of highly talented national and international PhD candidates, with over 500 PhD candidates enrolled. Their backgrounds cover a wide range of disciplines, from physics to psychology, medicine to psycholinguistics, and biology to artificial intelligence. Similarly, their interdisciplinary research covers genetic, molecular, and cellular processes at one end and computational, system-level neuroscience with cognitive and behavioural analysis at the other end. We ask all PhD candidates within the Donders Graduate School to publish their PhD thesis in the Donders Thesis Series. This series currently includes over 600 PhD theses from our PhD graduates and thereby provides a comprehensive overview of the diverse types of research performed at the Donders Institute. A complete overview of the Donders Thesis Series can be found on our website: <https://www.ru.nl/donders/donders-series>

The Donders Graduate School tracks the careers of our PhD graduates carefully. In general, the PhD graduates end up at high-quality positions in different sectors, for a complete overview see <https://www.ru.nl/donders/destination-our-former-phd>. A large proportion of our PhD alumni continue in academia (>50%). Most of them first work as a postdoc before growing into more senior research positions. They work at top institutes worldwide, such as University of Oxford, University of Cambridge, Stanford University, Princeton University, UCL London, MPI Leipzig, Karolinska Institute, UC Berkeley, EPFL Lausanne, and many others. In addition, a large group of PhD graduates continue in clinical positions, sometimes combining it with academic research. Clinical positions can be divided into medical doctors, for instance, in genetics, geriatrics, psychiatry, or neurology, and in psychologists, for instance as healthcare psychologist, clinical neuropsychologist, or clinical psychologist. Furthermore, there are PhD graduates who continue to work as researchers outside academia, for instance at non-profit or government organizations, or in pharmaceutical companies. There are also PhD graduates who work in education, such as teachers in high school, or as lecturers in higher education. Others continue in a wide range of positions, such as policy advisors, project managers, consultants, data scientists, web- or software developers, business owners, regulatory affairs specialists, engineers, managers, or IT architects. As such, the career paths of Donders PhD graduates span a broad range of sectors and professions, but the common factor is that they almost all have become successful professionals.

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