Journal of School Psychology 103 (2024) 101297

Contents lists available at ScienceDirect

Journal of School Psychology

journal homepage: www.elsevier.com/locate/jschpsyc

The relational side of teachers' self-efficacy: Assimilation and contrast effects of classroom relational climate on teachers' self-efficacy

Marjolein Zee [a,b,*], Peter F. de Jong [b,1], Helma M.Y. Koomen [b,1]

[a] Department of Psychology, Education and Child Studies, Erasmus University Rotterdam, the Netherlands
[b] Research Institute of Child Development and Education, University of Amsterdam, the Netherlands

ARTICLE INFO

Editor: Craig A. Albers
Associate Editor: Danny Hajovsky

Keywords:
Student-specific teacher self-efficacy
Closeness
Conflict
Classroom relational climate
Doubly latent SEM

ABSTRACT

Although much is known about the sources of teachers' self-efficacy (TSE), less attention has been paid to the social-contextual specificity of TSE and the processes influencing the relevance of TSE information sources. This study investigated both dyad-level relationships and the classroom relational climate as predictors of TSE at the student and classroom level. Additionally, we explored two competing hypotheses—*assimilation* and *contrast*—articulating how teachers use information conveyed by classroom relationship experiences as a heuristic to interpret relationship experiences with individual students as a TSE source. Elementary school teachers ($N = 86$; 72.05% female) completed the Student–Teacher Relationship Scale and Student-Specific Teacher Self-Efficacy Scale for randomly selected children ($N = 687$, 50.1% girls, Grades 3–6) from their classes. Doubly latent multilevel structural equation modeling was used to test for associations of Closeness and Conflict with TSE at both the student (L1) and classroom level (L2). Contextual effects, corresponding to associations of classroom-level Closeness and Conflict with TSE above the same associations at the student level, were calculated to test assimilation and contrast hypotheses. At L1, results indicated positive associations between Closeness and TSE and negative associations between Conflict and TSE. At L2, only Conflict was negatively associated with TSE. Consistent with the contrast hypothesis, the contextual effect of Closeness, but not Conflict, was negative and significant. Hence, teachers' judgments of a relatively close classroom relational climate may lead them to perceive relational closeness with individual students in a more negative light, resulting in lower levels of TSE toward these students.

1. Introduction

Will I be able to calm my student when she is disruptive or noisy? Can I get my student to believe he can do well in schoolwork? Will I be able to timely recognize that my student does not feel well? When it comes right down to it, teachers' self-efficacy (TSE), or beliefs in their ability to adequately teach individual students in class, may play a pivotal role in how they approach and bring about their daily teaching tasks (Tschannen-Moran & Woolfolk Hoy, 2001; Zee & Koomen, 2016). Empirical results across a vast number of studies

* Corresponding author at: Department of Psychology, Education and Child Studies, Erasmus University Rotterdam, Burg. Oudlaan 50, P.O. Box 1738, 3000 DR Rotterdam, the Netherlands.
E-mail addresses: zee@essb.eur.nl (M. Zee), p.f.dejong@uva.nl (P.F. de Jong), h.m.y.koomen@uva.nl (H.M.Y. Koomen).
[1] Research Institute of Child Development and Education, University of Amsterdam, P.O. Box 15,776, NL-1001 NG Amsterdam, the Netherlands.

https://doi.org/10.1016/j.jsp.2024.101297
Received 27 January 2023; Received in revised form 30 October 2023; Accepted 6 February 2024
Available online 16 February 2024

have indicated that teachers who live up to their self-efficacy provide high-quality instruction, adopt proactive approaches to managing disruptive behavior, and convey emotional supports that activate their students' engagement (e.g., Burić & Kim, 2020; Hajovsky et al., 2020; Zee & Koomen, 2016, 2020). Furthermore, TSE in relation to individual students has recently been suggested to serve as a significant predictor of students' achievement in different subjects, including literacy (Guo et al., 2021), reading comprehension, and math (Zee et al., 2018). Given the accrued benefits of TSE, one important direction for future research is to explore the factors and processes underlying teachers' capability judgments.

Bandura's (1997) social-cognitive theory may be the most used framework for understanding the specific factors that lead teachers to feel self-efficacious. This model emphasizes four key sources of information that shape teachers' judgments of their capabilities: Mastery experiences, social comparisons, performance feedback, and affective states (Bandura, 1997). In support of this, several studies have suggested that teachers tend to build a healthy sense of self-efficacy when they are satisfied with their past classroom performances, can cope with psychological stressors, and receive support from various members of the school community (Morris et al., 2017; Skaalvik & Skaalvik, 2017; Yada et al., 2019).

Although significant progress has been made in exploring the various sources of information that influence TSE, there are still areas requiring further investigation (Klassen et al., 2011; Morris et al., 2017). First, many studies have primarily focused on how general attributes of teachers or students inform TSE (e.g., Morris et al., 2017). Less attention has been paid to the social-cognitive tenet that TSE inherently is a social construction that is shaped by and responds to the constraints and opportunities extant in the immediate environment (Bandura, 1997; Neugebauer et al., 2019). Investigations on social capital in schools have suggested that classroom-level social factors, including classroom interactions, provide information from the four presumed sources about whether teachers can muster whatever it takes to succeed with a child (cf. Guo et al., 2012; Neugebauer et al., 2019; Siciliano, 2016). Next to such classroom-level factors, an emerging strand of research on student-specific TSE has indicated that teachers' self-efficacy may also vary as a function of students' idiosyncratic behaviors and needs, which emerge in the context of dyadic student–teacher relationships (Bosman et al., 2021; Schwab, 2019; Zee et al., 2017). Although it is plausible that TSE may be affected by both the broader classroom relational climate and dyad-level relationships, virtually no examinations have considered these relational factors at different levels as predictors of TSE at the same time. This leaves a gap in our understanding of the ways in which TSE is construed in the context of interpersonal relationships at both the student and classroom levels.

Second, a social-contextual focus on TSE may open critically important new perspectives about the standards of comparison teachers use to evaluate relational sources of self-efficacy (Bandura, 1997; Morris et al., 2017). Consider, for instance, a teacher who experiences repeated conflicts with a particular student in class. The extent to which such conflicts may be informative to TSE toward this student may heavily depend on whether teacher and student are in a classroom where discord and friction are the norm, or where teachers perceive their relationships with students as generally warm and supportive. Yet, how teachers use the classroom relational context as a heuristic to weigh information about relationships with individual students in shaping their TSE has been seldomly discussed. This information is critical for moving beyond merely describing the magnitude of the association between relationship quality and TSE to assessing the classroom contextual processes that govern this association.

This study aimed to address these two lacunae by considering teachers' perceptions of the classroom relational climate and their relationships with individual students as primary conduits through which they gain access to efficacy-relevant information. Two specific aims were addressed. First, we investigated both dyad-level relationships and the broader classroom relational climate as predictors of TSE at the student and classroom level. Second, drawing on both attachment theory (Bowlby, 1969/1982) and frame-of-reference models (Marsh, 1986), we explored two competing working hypotheses articulating how teachers may use information conveyed by classroom relationship experiences as a heuristic to interpret relationship experiences with individual students as a source of TSE. Therefore, this study may provide further insight into the processes governing the interpretation and integration of information into appraisals of TSE in the context of classroom-level and dyadic relationships.

1.1. An interpersonal social-cognitive perspective on the formation of TSE

In the present study, we extended Bandura's (1997) social-cognitive assumptions about the sources of self-efficacy by incorporating these assumptions into an interpersonal perspective of student–teacher relationships. Our integrated model acknowledges the intrinsic connection between TSE and the specific students that teachers interact with in different domains (Tschannen-Moran & Woolfolk Hoy, 2001; Zee, Koomen, et al., 2016). According to this view, individual student's characteristics and behaviors during daily interactions provide crucial information for teachers to assess their ability to effectively instruct, motivate, and support them (Sawyer et al., 2022; Zee, de Jong, & Koomen, 2016). Indeed, existing research has spawned some evidence that TSE can rise or fall according to the level of distrust and discordance in the relationship with an individual child, with less efficacious teachers experiencing more conflict and more efficacious teachers reporting greater closeness (Kunemund et al., 2020; Zee et al., 2017). Other studies have marked students' socio-emotional behaviors and special educational needs as the type of information teachers attend to and use as direct sources of their TSE in domains of behavior management, relationship building, instructional strategies, and student motivation (e.g., Lambert et al., 2009; Sawyer et al., 2022; Spilt & Koomen, 2009; Van Mieghem et al., 2022; Zee, de Jong, & Koomen, 2016). Yet, how relationship quality and TSE are related to one another at the student level, classroom level, or both has gone unexplored so far.

Expanding beyond the social-cognitive paradigm, our framework recognizes that individual student encounters alone may not directly shape TSE formation (Bandura, 1997; Morris et al., 2017). Rather, the information teachers gather through active, vicarious, social, or physiological interactions with students may only shape TSE through cognitive processing in the context of other relationships that teachers have built in class. To our knowledge, little is known about how teachers process multidimensional efficacy information. In this study, we offer two theory-driven hypotheses of the judgmental processes governing teachers' interpretation and

integration of information into self-efficacy appraisals, each of which may yield different evaluative consequences for TSE. We refer to these as the *assimilation hypothesis* and *contrast hypothesis*.

1.2. The assimilation hypothesis

Various factors and processes can help us understand how teachers perceive their TSE within the context of relationships. One salient mechanism is the *assimilation effect* of teachers' internal working models on their perceptions of self and others. This effect suggests that teachers' inclination toward assimilation leads them to interpret relationship experiences with individual students consistent with their general relationship experiences with students in class (i.e., the classroom relational climate; Collins et al., 2006).

This study draws on attachment theory (Bowlby, 1969/1982) and to a lesser extent, social comparison theory (e.g., Festinger, 1954; Marsh, 1986), to support the rationale behind the assimilation hypothesis. These frameworks suggest that cumulative experiences with significant others shape internal working models, or mental representations, of oneself and the social world. Such mental representations encompass beliefs, feelings, and personal attributes that serve as cognitive tools to interpret others' intentions, behaviors, and actions in mutual interactions (Bowlby, 1969/1982; Collins & Read, 1994). In the context of teaching, attachment-derived dimensions of closeness and conflict generally capture these mental representations, each providing valuable information about TSE. Generally, close relationship representations are considered conceptually consistent with secure attachment, reflecting warmth, open communication, and confidence during interactions with a student. Conflict represents an insecure attachment style where teachers struggle to handle the student, perceive them as unpredictable or angry, and feel pressured and emotionally drained.

There is consensus that mental representations can be represented as an integrated network of interrelated models, with global representations at the highest level and domain- and relationship-specific representations at lower levels (e.g., Crittenden, 1990; Sibley & Overall, 2008, 2010). For teachers, domain-specific models reflect their beliefs and feelings about their professional roles and capabilities (Spilt et al., 2011). Such generic styles of relating to all students in class are believed to be aggregated from idiosyncratic relationship experiences with individual students (cf. Hudson et al., 2015; Pianta et al., 2003). Once formed, however, they tend to exert top-down pressure on teachers' relationship-specific models, shaping their perceptions of themselves toward a particular student and those of this child (e.g., Bowlby, 1969/1982; Pianta et al., 2003). As a result, teachers' domain-specific models often serve as a default guide for interpreting new relationships without initial evaluation of each new experience.

Research has indeed indicated that general expectations about relationships may color relationship-specific information in a top-down fashion, even beyond the stability of relationship-specific models (Blain et al., 1993; Sibley & Overall, 2010). Studies on attachment activation have shown that individuals who were primed to think about past experiences of (in)security were apt to activate corresponding mental models and act accordingly (Collins & Feeney, 2004; Gillath & Shaver, 2007; Mikulincer et al., 2002). Furthermore, Pierce and Lydon (2001) conducted a longitudinal study and found that young adults with positive global mental representations tended to have similarly positive social interactions across different relationships.

Research on assimilation processes in intimate relationships provides further insights. This literature suggests that the quality of domain-specific representations acts as "environmental molds" that bias the interpretation of new information during dyadic interactions (Meehl, 1992). Specifically, individuals with negative global models tend to interpret relationship-specific events in a pessimistic manner, which negatively affects their emotional states and ability to view their partner's behavior in a positive light (Collins et al., 2006). In contrast, individuals with positive models tend to endorse relationship-enhancing attributions, engage in relationship-promoting behaviors (Simpson et al., 1996), approach challenging situations with self-confidence (Mikulincer & Shaver, 2003), and recover from conflicts without lingering negative emotions (Salvatore et al., 2011).

Extrapolating from these findings, the *assimilation effect* suggests that teachers' domain-specific representations may serve as important guides for processing efficacy-relevant information during dyadic teacher–student interactions in a consistent and predictable way (Bowlby, 1969/1982). Specifically, we hypothesized that close perceptions of the classroom relational climate (i.e., domain-specific models) serve as a unique cognitive resource, allowing teachers to construe their relationship experiences with individual students in a favorable way. This optimistic outlook enables teachers to embrace efficacy-relevant information from various sources and maintain a healthy self-efficacy (Mikulincer, 1997). In contrast, representations of conflict may create cognitive vulnerabilities that unwittingly predispose teachers to perceive their relationship experiences more pessimistically. These difficulties in maintaining positive self-images as teachers and interpreting students' intentions and behaviors may lead to more negative judgments of their self-efficacy.

1.3. The contrast hypothesis

Teachers may also exhibit contrast effects. *Contrast effects* suggest that teachers perceive their relationships with individual students more negatively when their evaluations of the classroom relational climate are positive, and vice versa. This hypothesis is largely derived from Marsh's (1986) work on frames of reference, which is rooted in social comparison theory (Festinger, 1954) and research on adaptation level and psychophysical judgment (e.g., Helson, 1964). Central to this work is the notion that comparison processes, or frames of reference that groups provide, are key to understanding how perceptions of self are shaped. Such perceptions of self are commonly believed to guide future accomplishments, behaviors, and beliefs (Marsh & Craven, 2006; Skaalvik & Skaalvik, 2002), including self-efficacy.

Thus far, Marsh's big-fish-little-pond effect (BFLPE) is probably the most celebrated application of the frame of reference model. Originating from research on academic self-concept, the BFLPE describes contrast effects as the primary social comparison mechanism influencing self-perceptions (Marsh et al., 2000). Statistically speaking, contrast or reference group effects (Marsh, 1987; Marsh et al.,

2000) are negative effects that occur when judgments of target stimuli deviate from the context. Such negative effects are reflected by the finding that equally able students tend to rate their academic self-concepts (i.e., target judgments) lower in high-achieving classrooms (i.e., the context) and higher when the average ability levels of their classmates are low (see Fang et al., 2018, for an overview).

Marsh's model has demonstrated its applicability across various psychological constructs, age groups, and contexts (Marsh & Hau, 2004; Nagengast & Marsh, 2012; Seaton et al., 2010). Hence, it may also offer leverage for understanding how teachers interpret and integrate information into appraisals of TSE in the context of student–teacher relationships. Accordingly, we posit that teachers tend to compare the relationship with a particular student with those of other students in their classrooms and may use such social comparisons as a frame of reference for the formation of their self-efficacy appraisals. Following a contrast effect, we hypothesized that teachers gather comparative information about students' behaviors, actions, and intentions through daily interactions. Such explicit knowledge contributes to the creation of a "hierarchy of relationships" at the classroom level, which guides the interpretation of efficacy-relevant encounters with individual students. Thus, the same relationship with a particular student may be interpreted more negatively in a class where warm and conflict-free relationships are the norm and more positively in a class where the average quality of relationships is relatively low. This may result in a negative association between the quality of the classroom relational climate and TSE, after controlling for the dyadic relationship with this student.

1.4. Present study

In this study, we adopted a contextual approach to explore the link between teachers' relationship experiences with individual students and their self-efficacy beliefs toward these students. Our approach differed from previous research in two ways. First, instead of fitting student-level models that ignore the multilevel nature of these associations or conducting analyses on aggregated data only, we applied doubly latent multilevel structural equation modeling (ML-SEM). With this technique we can control for measurement and sampling error and produce unconfounded effects at both the student level and classroom level (Marsh et al., 2012). Second, we measured teachers' relationships and self-efficacy toward individual students at the student level (Level 1 [L1]) and aggregated these constructs to form classroom-level measures of relational climate and TSE (Level 2 [L2]). These aggregated constructs enabled us, as a preliminary step, to simultaneously examine the extent to which dyad-level relationship quality is associated with student-specific TSE at L1 and classroom relational climate with classroom-specific TSE at L2 (Research Aim 1). Due to the scarce previous research regarding those associations at different levels, we did not set specific hypotheses.

We also explored whether associations at L1 are dependent upon effects at L2, and hence, explored two theory-driven working hypotheses—assimilation and contrast—each of which may yield different evaluative consequences for TSE (Research Aim 2). According to the assimilation hypothesis, teachers tend to interpret their relationship experiences with individual students in line with the overall classroom relational climate. If teachers perceive a secure (i.e., close) classroom relational climate, they are also more likely to experience higher levels of closeness with individual students, resulting in higher levels of self-efficacy at L1 (Hypothesis 1a). Conversely, if teachers perceive an insecure (i.e., conflictual) classroom relational climate, they are more likely to view their relationship experiences with individual students in a more conflictual light, leading to lower levels of self-efficacy at L1 (Hypothesis 1b).

The contrast hypothesis predicted that teachers' judgments of their relationships with individual students move away from their perceptions of the classroom relational climate. If teachers perceive a secure (i.e., close) classroom relational climate, they may view their relationship experiences with individual students less positively (i.e., lower levels of closeness), resulting in lower levels of self-efficacy (Hypothesis 2a). Conversely, if teachers perceive an insecure (i.e., conflictual) classroom relational climate, they may view their relationship experiences with individual students less negatively (i.e., less conflict), leading to higher levels of self-efficacy (Hypothesis 2b).

2. Method

2.1. Participants

Data for the present study were collected in two consecutive school years (Winter/Spring 2013–2014 and Winter/Spring 2014–2015) as a part of a larger research project designed to evaluate teachers' self-efficacy and skills managing diversity in their classrooms. All participating teachers in this study were teaching in mainstream elementary classrooms; institutional Ethics Review Board approvals (Project No. 2013-CDE-3188 and 2015-CDE-3969) were obtained prior to initiating study procedures. Participating schools were recruited from a random pool of approximately 600 elementary schools across the Netherlands and through personal contacts and social networking sites (e.g., Facebook, LinkedIn). To ensure the sample's representativeness, our objective was to select a diverse range of schools that encompassed various demographics, including geographical distribution, religious affiliation, school size, urban or rural location, and student population characteristics (see Zee, Koomen, et al., 2016, for more information). Of all schools that were initially contacted, 34 schools were willing to take part in this study. Non-participation was mainly due to schools' already full agendas or participation in other research projects.

The total sample comprised 92 classroom teachers reporting about 734 students from their classrooms. For six teachers, however, data on either relationship reports (4.1%) or self-efficacy reports (3.1%) were fully missing. Therefore, the sample for the present study included all teacher–student dyads ($N = 687$) for whom (near-)complete data were available. Participating classroom teachers ($N = 86$) were upper elementary school teachers who all made an informed and voluntary decision to participate in this study. These teachers (72.05% female) ranged from 23 to 63 years of age ($M = 40.48$, $SD = 12.48$). This is roughly comparable to the larger

population of elementary school teachers in the Netherlands, 87% of who are female with a mean age of 42.7 years (Ministry of Education, Culture, and Science, 2021). Participants taught Grades 3–6 and 36.1% of the sample had a work schedule of 4 days a week or more ($M = 3.79$, $SD = 1.17$). This is roughly in line with the broader Dutch teacher population, where 45% are employed full-time in elementary education (Ministry of Education, Culture, and Science, 2021). In the Netherlands, part-time work is quite common among elementary school teachers for a variety of reasons. It allows teachers to balance their often-demanding professional responsibilities with personal and family commitments, offers them flexibility in terms of scheduling, and may reduce the risk of burnout. This is especially true for female teachers, who often work part-time to accommodate family responsibilities, which is supported by policies and societal norms aimed at achieving gender balance in the workforce. Teachers' years of professional teaching experience ranged from 1.5 to 44 years ($M = 15.11$ years, $SD = 11.37$), with a mean of 10.79 years at their current school ($SD = 9.17$, range = 0.5–36). Next to teaching, about half of the participating teachers also performed other tasks, including coordination tasks special needs coordinator, language or mathematics coordinator, or Information and Communications Technology (ICT) coordinator (who is responsible for managing and coordinating the use of ICT resources and systems within school), physical education, or leadership tasks (e.g., school principal, teacher leader).

Classrooms comprised 24 students on average (range = 10–34 students). The students for whom teachers reported on had a mean age of 10.68 years ($SD = 1.18$, range = 8–13). Of these students, 49.9% were boys and 82.7% had an ethnic Dutch background. Based on parents' educational level and work status, 2.7% of the students were considered to have a lower socioeconomic background, 41.2% a middle socioeconomic background, and 26.3% a higher socioeconomic background. For 29.7% of the students, information about SES was not available. This student sample was relatively similar to the larger population of Dutch elementary schoolers at the time of data collection in terms of gender (50.5% male students) and ethnicity (15% non-Dutch origin; CBS Statline, 2015a, 2015b). Moreover, previous studies using nationally representative elementary school samples (e.g., Zee et al., 2021) reported demographic characteristics for third- and sixth graders that resemble those of the students included in the present study. Hence, although the participating schools, teachers, and students cannot be considered fully representative, they seem to reasonably approximate the larger population.

2.2. Procedure

After schools were recruited, either school principals or participating teachers distributed information letters and consent forms to parents of all students from teachers' classrooms. From all consents received (parental consent rate = 95%) we randomly selected eight students from each teacher's classroom for whom they were asked to complete several questionnaires. Three teachers completed questionnaires about seven children and one teacher about nine children. This procedure was followed to ensure teachers did not feel overburdened and to increase their participation rate. Additionally, guidelines from Snijders and Bosker (1999) as well as prior studies (e.g., Zee et al., 2018) suggest that relatively high intra-class correlations may decrease the benefit of including whole classrooms in the sample.

During a planned school visit in the Winter/Spring of the schoolyear, teachers were asked to respond to general questions about their background characteristics as well as relationships with the eight randomly selected students. To avoid common method variance, teachers completed the student-specific teacher self-efficacy questionnaire for the eight randomly selected students through an online survey. The anonymous link to this survey was e-mailed directly after the school visit and teachers were required to return this survey within 2 weeks. The total survey took approximately 1 h for teachers to complete. The overall participation rate was 93%. After data collection was finished, teachers' participation was rewarded with school reports containing a conceptual overview of the study's results and gift vouchers of €20.

2.3. Instruments

2.3.1. Teachers' relationship experiences with individual students

Teachers' relationship experiences with individual students were measured using the Closeness and Conflict subscales of the short Dutch version of the Student–Teacher Relationship Scale (STRS; Koomen et al., 2012). Closeness (five items) evaluates the extent to which teachers perceive the student–teacher relationship to be warm, open, and secure, with items such as "I share an affectionate and warm relationship with this child." Conflict (five items) focuses on teachers' perceptions of the degree of anger, tension, and mistrust in the relationship with an individual student (e.g., "This child and I always seem to be struggling"). All items were rated on a 5-point Likert scale (1 = *definitely does not apply*, 5 = *definitely applies*). Prior studies (Zee et al., 2013; Zee & Koomen, 2016) have provided support for the psychometric quality of the short form of the Closeness and Conflict dimensions of the Dutch STRS, including factor loadings >0.60 and alpha coefficients ranging between 0.86 and 0.93. In the present study, alpha coefficients were 0.85 for Closeness and 0.90 for Conflict.

2.3.2. Teachers' perceptions of the classroom relational climate

To get an indication of teachers' judgments of the classroom relational climate, we followed a similar approach as used by others (e.g., Corbin et al., 2019; Zee et al., 2020), who aggregated the teacher-reported relationship dimensions of Closeness and Conflict to the classroom level of analysis. In prior studies (e.g., Zee et al., 2018; Zee & Rudasill, 2021), aggregation of the relationship scores of the eight students per classroom has been shown to be sufficient to generate reliable aggregate variables.

2.3.3. Teachers' self-efficacy toward individual students

Teachers rated their self-efficacy in relation to individual students using a short version of the Student-Specific Teacher Self-

Efficacy Scale (Student-Specific TSES; Zee, Koomen, et al., 2016). This student-specific version of Tschannen-Moran and Woolfolk Hoy's (2001) TSES reflects teachers' beliefs about their ability to deal with a specific student in different domains of teaching and learning, including Instructional Strategies (IS), Student Engagement (SE), and Emotional Support (ES). The domain of IS (four items) focuses on aspects of instructional delivery, including teachers' perceived ability to use various instructional methods that enhance individual students' learning. An example item is "How well can you respond to difficult questions from this student?". Additionally, the domain of SE (four items) taps teachers' perceived ability to activate a student's interest in schoolwork, with items such as "How much can you do to get this student to believe he/she can do well in schoolwork?". Last, the ES domain (four items) encompasses teachers' judgments of their ability to create safe and secure settings in which students feel free to explore and learn (e.g., "How well can you establish a safe and secure environment for this student?"). All items were rated by teachers on a 7-point Likert-type scale, ranging from 1 (*nothing*) to 7 (*a great deal*). Previous studies (e.g., Zee et al., 2018; Zee, Koomen, et al., 2016) have provided support for the construct validity of the Student-Specific TSES, both at the individual level and aggregate level. Furthermore, Zee, Koomen, et al. (2016) provided evidence supporting the notion that the domains of self-efficacy also reflect a reliable overall construct of TSE. To avoid model convergence problems and increase statistical power, we therefore took the three TSE-domains as indicators of teachers' overall sense of student-specific efficacy. Cronbach's alpha in this study was 0.94 for this overall student-specific TSE scale.

2.4. Data analysis

To investigate associations between teachers' relationship experiences and their self-efficacy beliefs toward individual students, we applied doubly latent multilevel structural equation models (ML-SEMs; Lüdtke et al., 2011; Marsh et al., 2009, 2012) using M*plus* version 8.4 (Muthén & Muthén, 1998–2012). One advantage of ML-SEM is that it takes the clustering of students within teachers into account by partitioning the variation in TSE between and within teachers (Snijders & Bosker, 1999). Therefore, it allows for the calculation of unbiased estimates of the standard errors associated with the regression coefficients and for the inclusion of L2-variables (i.e., classroom relational climate) in models with outcomes at the student level (i.e., TSE in relation to individual students). Additionally, doubly latent refers to the ability of these models to control for measurement and sampling error. Specifically, in this study both the individual Closeness and Conflict items, as well as separate domains of TSE, were specified as indicators of latent variables, which is a similar approach as confirmatory factor analysis. Moreover, the aggregated scores per item over the eight randomly selected students per classroom were considered indicators of the latent variable of classroom relational climate at L2.

We deliberately chose to estimate Closeness and Conflict separately based on both theoretical and empirical considerations. Theoretically, Closeness and Conflict are believed to represent distinct aspects of relationship quality rather than positions on a single continuum, capturing unique facets of the student–teacher relationship (e.g., Verschueren & Koomen, 2012). If this holds true, it follows that associations of Closeness and Conflict with TSE may vary. It becomes plausible, therefore, that each construct may provide evidence supporting or challenging the different hypotheses in this study. This assumption necessitates the separate investigation of these constructs in individual models rather than combining them in a single model where they are controlled for simultaneously. Secondly, from a practical viewpoint, we aimed to capture the specific and unique associations of Closeness and Conflict with TSE. By disentangling their potential influences, we can provide more detailed insights for educators and policymakers, thereby potentially facilitating targeted interventions to enhance student–teacher relationship quality in the classroom. Last, we opted for two separate models due to statistical power considerations. Our sample size, particularly the number of clusters, was small. Prior simulation results (Lüdtke et al., 2008) suggest that doubly latent ML-SEM typically requires at least 50 L2 units with 10–15 participants per unit to avoid convergence issues and estimation errors. To mitigate these, we reduced parameters by testing the associations of Closeness and Conflict separately. Furthermore, estimating separate models may address potential suppression effects arising from the negative moderate correlation between Closeness and Conflict that has often been found in prior research.

2.4.1. Modeling procedure

We took a three-step approach to analyzing the data. First, to justify the use of doubly latent ML-SEM, we evaluated the variability at L2 and calculated corresponding intraclass correlation coefficients (ICC1). In this step, we also evaluated the reliability of the aggregated scores, or ICC2 (Marsh et al., 2009, 2012; Raudenbush & Bryk, 2002), for student-specific TSE, Closeness, and Conflict, the latter two of which can be considered estimates of teachers' judgments of the classroom relational climate. In Step 2, we estimated a series of doubly latent confirmatory factor models to evaluate the hypothesized factor structure of Closeness, Conflict, and TSE at L1 and L2. Finally, in Step 3, we specified the two separate full doubly latent ML-SEMs for Closeness and Conflict. These models included Closeness/Conflict at L1 (i.e., relationship experiences with individual students) and L2 (i.e., classroom relational climate). Students' gender and age were also included as L1 covariates and teachers' years of teaching experience was added as a L2 covariate. All variables that were included at both L1 and L2 were group-mean centered. Covariates specified at L1 were grand-mean centered (Marsh et al., 2012). For the L2 associations, we evaluated *climate effects* (i.e., associations of teachers' perceptions of Closeness and Conflict with their TSE at the classroom level) as well as *contextual effects* (i.e., effects of the aggregated Closeness and Conflict scales after controlling for the effect of the corresponding constructs at L1). Importantly, these contextual effects allowed us to explore both the assimilation hypotheses (1a and 1b) and contrast hypotheses (2a and 2b).

2.4.2. Model goodness-of-fit

We used maximum likelihood estimation with robust standard errors and a scaled test statistic (MLR) to estimate each of the specified models. Missing data ($\leq$ 4.1%) were treated using full information maximum likelihood estimation (FIML). Under assumptions of data missing-at-random (MAR), the combination of these estimation methods has been demonstrated to lead to unbiased

parameter estimates (e.g., Shin et al., 2009). Overall model fit was gauged by using several absolute and relative fit indices. Absolute fit was evaluated with the (mean-adjusted) model χ^2, with non-significant χ^2 being indicative of good model fit (Kline, 2011; Little, 2013). Approximate fit was evaluated with the root mean square error of approximation (RMSEA), the standardized root mean square residual (SRMR), and the comparative fit index (CFI). The RMSEA and SRMR are absolute fit indices of the degree of misfit in the model, with values ≤ 0.05 reflecting a close fit and ≤ 0.08 a satisfactory fit (Browne & Cudeck, 1993; Hu & Bentler, 1999). The CFI reflects the ratio of misfit of the specified model, with values ≥ 0.95 indicating close fit and values ≥ 0.90 indicating acceptable fit (Bentler, 1992; Little, 2013).

3. Results

3.1. Preliminary analyses and descriptive statistics

Univariate higher-order moment descriptive statistics at the item and scale level are presented in Table 1. Teachers' responses on the Closeness and TSE scales and items were approximately normally distributed. In these domains, most items did not reach the skewness threshold of ±1.00 (range = −0.53 to −1.21 for Closeness and − 0.60 to −0.87 for TSE). Moreover, kurtosis values ranged from −0.57 to 1.85 for items comprising the Closeness dimension and from 0.25 to 1.25 for TSE-scales. Items appeared to be highly skewed, however, for Conflict (range = 1.32–2.43) and were characterized by high kurtosis (range = 0.35–5.19). To deal with these high skewness and kurtosis levels, we used robust maximum likelihood estimation to obtain parameter estimates (Muthén & Muthén, 1998–2012) as this estimator is robust to non-normality and enables the adjustment of standard errors.

Correlation patterns and descriptives at L1 and L2 are presented in Table 2. To justify the use of doubly latent ML-SEM, we first evaluated the presence of classroom-level variability in teachers' relationship experiences and self-efficacy beliefs. To this end, we calculated intraclass correlations for each indicator of a latent factor (ICC1), which reflect the degree to which teachers' relationship perceptions of and self-efficacy beliefs about individual students are similar within the same classroom. In this study, all ICC1 values were substantial (Lüdtke et al., 2011), ranging between 0.14 and 0.29 for Closeness, between 0.11 and 0.14 for Conflict, and between 0.14 and 0.30 for TSE. Notably, ICC1 values were lowest for indicators of Conflict, which substantiates the supposition that experiences of conflict are more likely to be driven by stable student characteristics such as behavior problems than experiences of closeness (cf. Spilt et al., 2012).

In addition to ICC1 values, we also evaluated the reliability of the aggregated measures at the classroom level (i.e., teachers' perceptions of Closeness and Conflict and their self-efficacy beliefs toward the classroom) based on their judgments of the eight randomly selected students from their classrooms (Lüdtke et al., 2008; Marsh et al., 2009). Based on the between- and within-level variance of the indicators, ICC2 values were 0.68 for Closeness, 0.70 for Conflict, and 0.66 for TSE, which can be considered sufficient. According to the guidelines from Cicchetti (1994), ICC2 values can be considered good when they range between 0.60 and 0.74.

3.2. Doubly latent models for closeness

Using multilevel confirmatory factor analysis (ML-CFA), we first evaluated the adequacy of the measurement model for Closeness, which included a Closeness and TSE factor at both L1 and L2. Table 3 presents the results from these preliminary ML-CFAs. The baseline model for Closeness did not yet reach a satisfactory fit to the data. Modification indices suggested model improvement by adding correlations between the residuals of Closeness indicators 1 and 2 (both levels), which both focus on students' feelings of security, and between TSE-indicators Instructional Strategies and Student Engagement (L1 only), which both tap aspects of

Table 1
Univariate higher-order moment descriptive statistics at the item level.

Item/scale	*M*	Variance	Skewness	Kurtosis
Closeness[a]	3.89	0.67	−0.70	0.19
$Closeness_1$	3.60	1.48	−0.72	−0.46
$Closeness_2$	3.54	1.34	−0.53	−0.57
$Closeness_3$	4.11	0.81	−0.90	0.50
$Closeness_4$	4.30	0.64	−1.21	1.85
$Closeness_5$	3.92	1.02	−0.87	0.40
Conflict[a]	1.58	0.80	1.81	2.58
$Conflict_1$	1.48	0.91	2.10	3.51
$Conflict_2$	1.57	1.06	1.83	2.42
$Conflict_3$	1.58	1.22	1.93	2.62
$Conflict_4$	1.42	0.84	2.43	5.19
$Conflict_5$	1.84	1.62	1.32	0.35
Teacher Self-Efficacy[b]	5.49	0.84	−0.73	0.56
Instructional Stategies	5.37	0.95	−0.60	0.25
Student Engagement	5.55	1.21	−0.87	0.55
Emotional Support	5.56	0.77	−0.82	1.25

[a] Range = 1–5.
[b] Range = 1–7.

Table 2
Univariate higher-order moment descriptive statistics and bivariate correlations at the scale level.

	1.	2.	3.	4.	5.	6.
1. Teacher Experience	1.00	–	–	0.19	−0.19	0.38**
2. Student Age	–	1.00	–	–	–	–
3. Student Gender	–	−0.05	1.00	–	–	–
4. Closeness	–	−0.14**	0.29***	1.00	−0.47**	0.15
5. Conflict	–	0.02	−0.17***	−0.44***	1.00	−0.48**
6. Teacher Self-Efficacy	–	−0.21***	0.24***	0.49***	−0.67***	1.00
Mean[a]	15.14	10.68	–	3.89	1.58	5.63
Variance	128.77	1.40	–	0.67	0.80	0.76

Note. Level 1 (student level) correlations are presented below the diagonal; Level 2 (classroom level) correlations are presented above the diagonal. ***$p < .001$. **$p < .01$. *$p < .05$.
[a] Range = 1–5.

Table 3
Model fit statistics for doubly latent models of closeness, conflict, and TSE.

	TRd (df)	CFI	RMSEA	SRMR (within, between)	TRd (df)	ΔCFI
Model for Closeness:						
Baseline 2-factor model	270.71 (38)	0.906	0.094	0.070, 0.104	–	–
2-Factor model with correlated residuals	84.34 (35)	0.980	0.045	0.048, 0.072	617.37 (3)***	0.074
Final 2-factor model with partially constrained factor loadings	87.71 (39)	0.980	0.043	0.048, 0.093	5.30 (4)	0.000
Doubly latent ML-SEM	141.53 (57)***	0.969	0.046	0.046, 0.098	–	–
Model for Conflict:						
Baseline 2-factor model	130.91 (38)***	0.962	0.060	0.052, 0.406	–	–
2-Factor model with correlated residuals	98.31 (35)***	0.974	0.051	0.042, 0.260	18.68 (3)***	0.012
Final 2-factor model with partially constrained factor loadings	102.36 (40)***	0.974	0.048	0.041, 0.120	9.19 (5)	0.000
Doubly latent ML-SEM	131.76 (58)***	0.974	0.043	0.036, 0.102	–	–

Note. TRd = Sattora-Bentler scaled chi-square Difference; CFI = Comparative fit index; RMSEA = Root mean square error of approximation; SRMR = Standardized root mean square residual; ML-SEM = Multilevel structural equation model.

instructional delivery. Addition of these two residual correlations was thus justified by substantial conceptual overlap. Further improvement of the model was reached by constraining the model's factor loadings one by one. All factor loadings were invariant across levels, except for Closeness indicator 5 ("My interactions with this child make me feel effective and confident") and TSE-indicator Emotional Support.

Next, we fitted a full doubly latent ML-SEM, which had a good fit to the data, $\chi^2(57) = 141.53$, $p < .001$, RMSEA = 0.046, CFI = 0.969, $SRMR_{within} = 0.046$, $SRMR_{between} = 0.098$. The model's standardized parameter estimates are displayed in Fig. 1. At L1, parameter estimates indicated a statistically significant positive association between Closeness and TSE ($\beta = 0.55$, $p < .001$). Additionally, students' age ($\beta = -0.14$, $p = .020$) and gender ($\beta = 0.08$, $p = .018$) were significantly associated with TSE, suggesting that teachers felt more self-efficacious toward girls and younger students. At L2, teaching experience was significantly and positively associated with TSE ($\beta = 0.31$ $p = .026$). Additionally, the climate effect of teachers' perceptions of a Close Classroom Relational Climate was non-significant, albeit the effect size of this path could be considered small to medium ($\beta = 0.16$, $ES = 0.22$). The contextual effect of a Close Classroom Relational Climate was calculated by creating an additional parameter with a corresponding standard error and effect size (Marsh et al., 2009). These parameters reflect the difference between the corresponding L1 and L2 path coefficients for the associations of Closeness with TSE. Results indicated that the contextual effect of Closeness was negative and statistically significant ($B = -0.39$, $p = .040$, $\beta = -0.20$), with a small to moderate effect size ($ES = -0.42$). This suggests that teachers' judgments of a close classroom relational climate led them to perceive their close relationships with individual students in a more negative light, resulting in lower levels of TSE toward these students.

3.3. Doubly latent models for conflict

Results of the preliminary ML-CFAs for Conflict are displayed in Table 3. The Baseline 2-factor model for Conflict, including a Conflict and a TSE factor at both levels, failed to reach an adequate model fit. Improvement in model fit was achieved by adding correlations between the residuals of Conflict indicators 3 and 4 (both levels), which were both indicative of students' negative feelings toward their teacher, and again between TSE-indicators Instructional Strategies and Student Engagement (L1 only). Also, largely consistent with the model for Closeness, subsequently constraining the model's factor loadings across levels resulted in a further improvement of the model's fit. All factor loadings, except for TSE-indicator Emotional Support, were invariant across L1 and L2.

The full doubly latent ML-SEM for Conflict fitted the data relatively well, $\chi^2(58) = 131.76$, $p < .001$, RMSEA = 0.043, CFI = 0.974, $SRMR_{within} = 0.036$, $SRMR_{between} = 0.102$. Fig. 2 displays the final model's standardized parameter estimates. At L1, the negative path from Conflict to TSE was statistically significant ($\beta = -0.54$, $p < .001$). Students' age ($\beta = -0.20$, $p < .001$) and gender ($\beta = 0.13$, $p < .001$) were also significantly associated with TSE at this level, suggesting that teachers felt more self-efficacious toward girls and

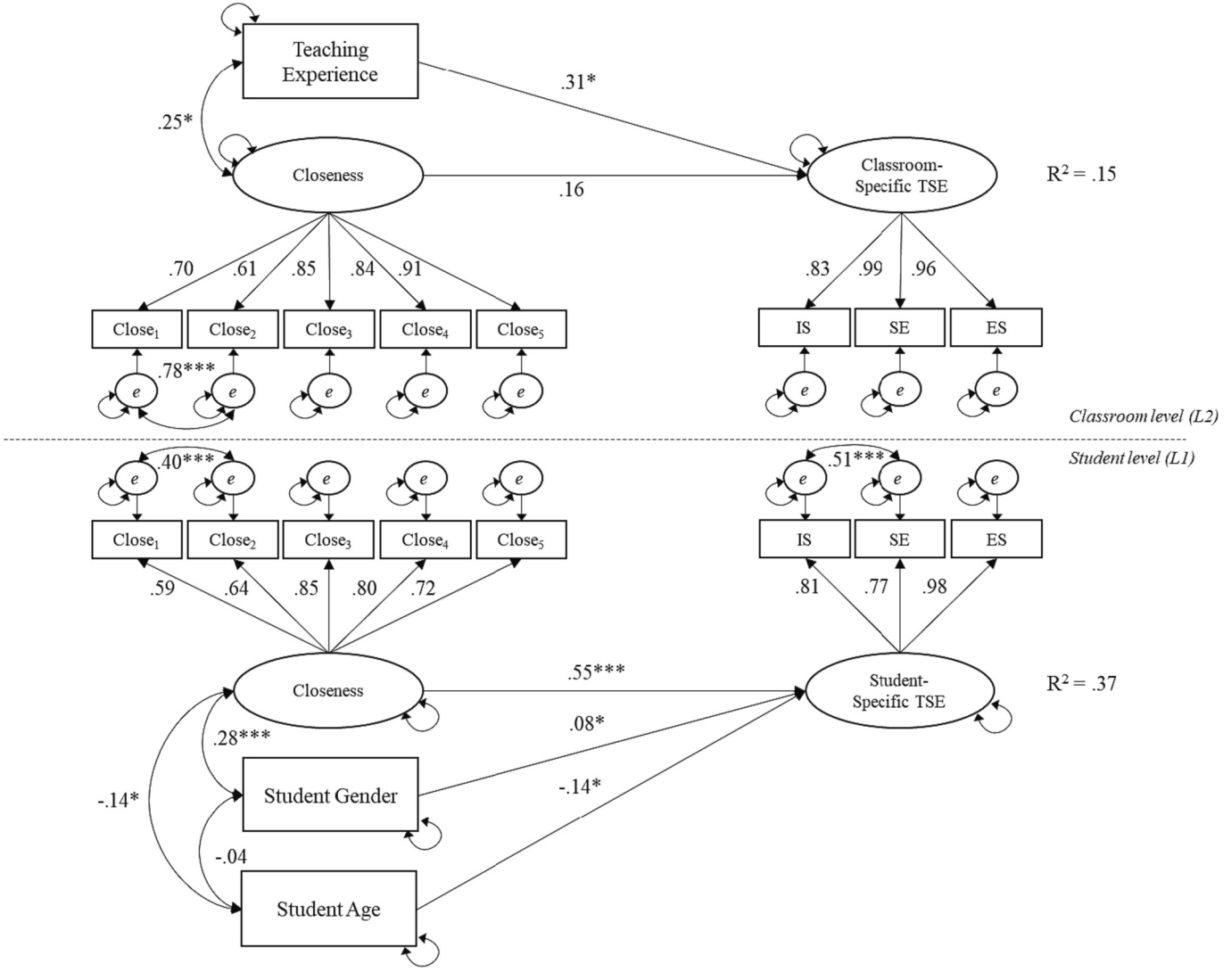

Fig. 1. Standardized parameters of the doubly latent structural equation model for Closeness.

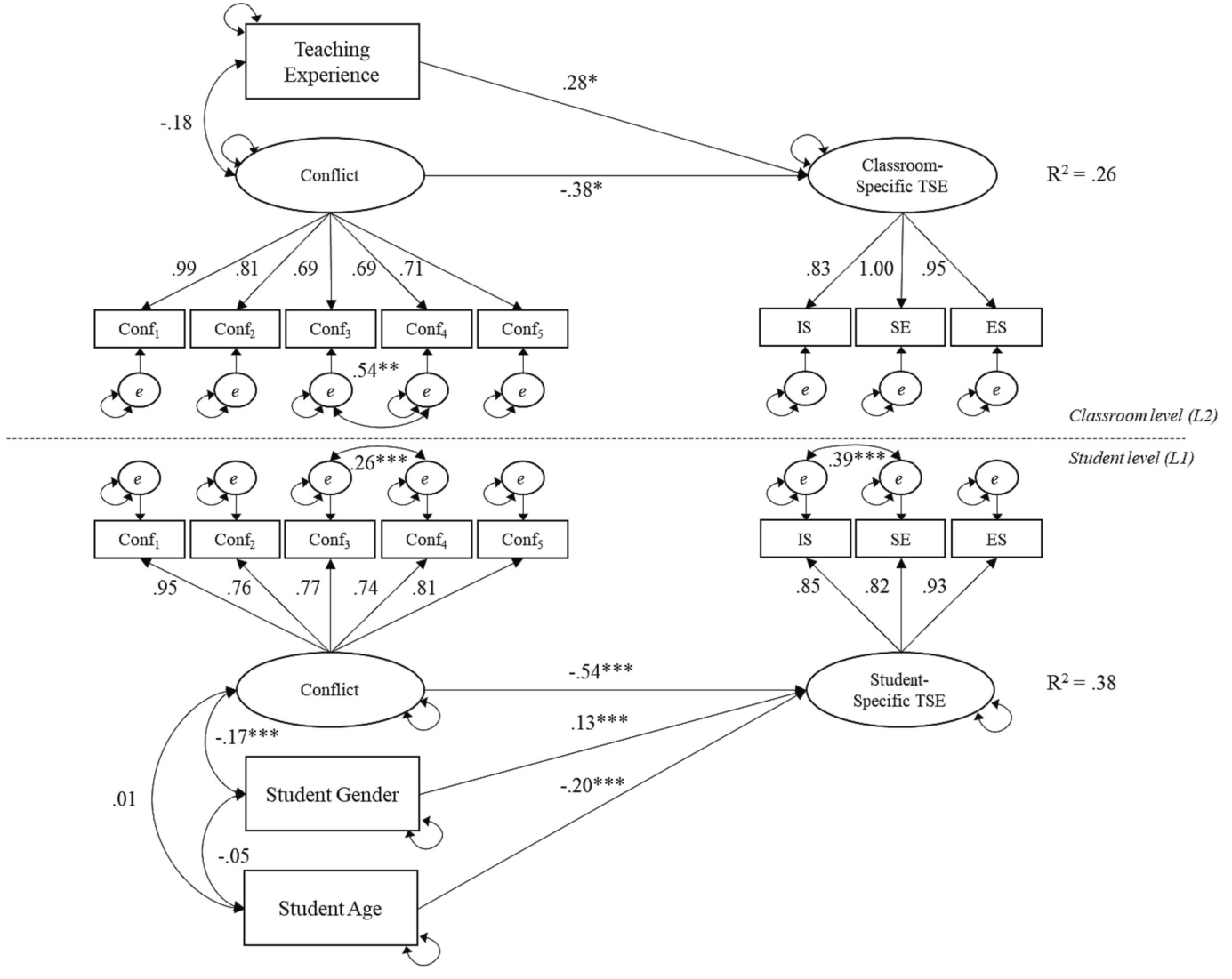

Fig. 2. Standardized parameters of the doubly latent structural equation model for Conflict.

younger students. At L2, parameter estimates indicated a negative climate effect of teachers' perceptions of a conflictual Classroom Relational Climate on TSE ($\beta = -0.38$, $p < .05$, $ES = -0.52$) as well as a positive association between teaching experience and TSE ($\beta = 0.28$, $p < .05$). The contextual effect of a conflictual Classroom Relational Climate was non-significant ($B = -0.03$, $\beta = -0.01$, $ES = -0.02$). Hence, when teachers perceive a conflictual classroom relational climate, they may not automatically view their individual student relationships in a similar conflictual manner. Consequently, their teacher self-efficacy toward these students does not appear to be influenced by the presence of a conflictual classroom climate.

4. Discussion

Over the last 50-plus years, theoretical and empirical work on TSE have taught us that teachers tend to build their sense of efficacy on various sources of efficacy-relevant information (Morris et al., 2017). Much of this work has primarily focused on specific teacher attributes that directly correlate with TSE, with studies showing that teachers' knowledge, teaching experience, and satisfaction with past performances may increase their self-efficacy (e.g., Morris et al., 2017; Skaalvik & Skaalvik, 2017; Yada et al., 2019). Two key aspects that have received far less attention concern the social-contextual specificity of TSE and the processes influencing the relevance of TSE information sources under different classroom conditions. In this study, therefore, two aims were addressed. First, as a preliminary step, we investigated both dyad-level relationships and the broader classroom relational climate as predictors of TSE at the student and classroom level. Second, drawing on both attachment theory (Bowlby, 1969/1982) and frame-of-reference models (Marsh, 1986), we explored two interrelated working hypotheses articulating how teachers may use information conveyed by classroom relationship experiences as a heuristic to interpret relationship experiences with individual students as a source of their TSE. Therefore, this study provides further insight into the processes governing the interpretation and integration of social information into appraisals of TSE in the context of classroom-level and dyadic relationships.

4.1. Relational sources of TSE

At L1, results indicated that teachers felt more self-efficacious toward individual students when they experienced high degrees of warmth and open communication, and relatively low degrees of discordance and distrust in relationships with these students. These findings held after accounting for students' age and gender and add to those reported in past empirical work, which mainly focused on TSE in relation to individual students with specific backgrounds and needs (e.g., Geerlings et al., 2018; Sawyer et al., 2022; Schwab, 2019; Van Mieghem et al., 2022; Zee, de Jong, & Koomen, 2016).

Notably, the coefficients for closeness and conflict in our study appeared to be relatively large compared to those of other efficacy-relevant sources that were investigated in prior studies on TSE. One substantive explanation for these stronger coefficients is that past studies predominantly focused on the relevance of tangible information sources for TSE, including rewards, instructional feedback, shared knowledge, or students' school adjustment (e.g., Fackler et al., 2021; Guo et al., 2011; Neugebauer et al., 2019; Tschannen-Moran & Woolfolk Hoy, 2007). It is possible that less tangible and more interpersonal sources, such as warmth, affection, and mutual trust may be more important to teachers' sense of student-specific efficacy than directly observable sources. Such sources, more than rewards or instruction-related experiences, are likely to elicit distinct pleasant feelings that help teachers cope with difficult situations and increase their sense of competence toward individual students (cf. Bandura, 1997; Chang, 2013).

Another explanation is that the teachers participating in our study were explicitly asked to evaluate the quality of their relationships with and self-efficacy beliefs toward the same individual students. This approach is different from other investigations that either focused on information sources of TSE at a general level (e.g., the frequency of feedback provided by other teachers) or combined support ratings from various members of the school community (Capa Aydin & Woolfolk Hoy, 2005; Neugebauer et al., 2019). By thinking about the specific needs, behaviors, and actions of individual students, teachers in our study might have been better able to make inferences about whether they can muster whatever it takes to succeed with the children in question, leading to stronger and possibly also more consistent associations with TSE. Future researchers are therefore encouraged to further exploit the increasingly common student-specific approach to measuring TSE to gain a deeper understanding of how teachers manage various sources of self-efficacy during their interactions with individual students.

Next to associations at L1, we also explored the extent to which the relational classroom climate would add to teachers' classroom-specific self-efficacy at L2. Once we controlled for teachers' years of teaching experience, only their ratings of a conflictual classroom atmosphere, but not their perceptions of a more positive classroom climate, were associated with lower levels of TSE at L2. This finding is consistent with the assumptions advanced by Bandura (1997) that difficult situations in class may undermine teachers' sense of social efficacy to develop interpersonal relationships that add to their sense of self and bring satisfaction to their jobs. Prior studies have indeed suggested that teachers generally feel less confident in their ability to execute their daily teaching activities when they experience a high degree of classroom stress or disruptive student behavior (Klassen & Chiu, 2010; Sutherland & Oswald, 2005). This is worrying, as such a lack of classroom-level efficacy is likely to bring about more conflict in new classroom situations, which may set into motion a vicious cycle in which negative classroom behaviors and negative teacher cognitions, emotions, and behaviors influence each other in a reciprocal way (cf. Bandura, 1997; Stipek & Miles, 2008).

Notably, no significant association was found between relational closeness and classroom-specific TSE. Generally, this finding seems to imply that positive aspects of the classroom relational climate, including warmth and open communication, may be less of a factor in TSE toward the classroom than negative aspects, such as discordance and distrust. Our findings do not agree with prior empirical studies in which positive, medium-sized associations between classroom climate and TSE have been found (e.g., Aldridge & Fraser, 2018; Fackler et al., 2021; Künsting et al., 2016). At the same time, there is some compatibility with the notion that domain-

specific representations are not redundant with relationship-specific representations, but rather comprise information above and beyond the stability of relationship-specific models (Pierce & Lydon, 2001).

We can only make a couple of educated guesses about why negative, but not positive, aspects of the relational classroom climate play a role in TSE. One is that prior studies have typically derived the quality of the classroom relational climate from teachers' or students' global reports of classroom climate, comprising both positive indicators (e.g., "Students in this class take care to create a pleasant learning atmosphere") and reverse-coded negative indicators (e.g., "I lose quite a lot of time because of students interrupting lessons"; Fackler et al., 2021). In doing so, these studies have refrained from the attachment-based idea that closeness and conflict, instead of falling along an underlying continuum, may each tap unique qualities of the classroom relational climate that are differently associated with TSE (cf. Verschueren & Koomen, 2012).

Second, it is likely that highly negative classroom interactions and events may have far stronger effects on teachers' self-efficacy than positive experiences. Indeed, in a seminal review, Baumeister et al. (2001) reviewed an assortment of evidence that various unfavorable interpersonal aspects, such as negative affect, poor relationships, and bad feedback are far more powerful and processed more thoroughly than good ones. Such negative experiences and interpersonal interactions are furthermore less likely to be disconfirmed than positive relationship experiences, especially when they are reciprocated. Hence, it seems plausible that teachers assign more weight to conflictual classroom experiences than to close relational experiences in class and, because of these bad experiences, feel less efficacious in the long run.

Overall, our results at both L1 and L2 thus resonate quite well with past empirical work on social capital and attachment, suggesting that interpersonal interactions, including those with colleagues and students, may provide teachers with key social resources needed to interpret, improve, and maintain their sense of efficacy (e.g., Bosman et al., 2021; Neugebauer et al., 2019; Siciliano, 2016).

4.2. Assimilation and contrast effects on TSE

Our discussion to this point has explored direct associations of closeness and conflict with TSE at L1 and L2. Following social-cognitive theory, however, information that teachers gather during interactions with students may become instructive to TSE only through cognitive processing of such information in the context of other relationships they have built in class. To gain further insight into these cognitive processes, we formulated two theory-driven working hypotheses (i.e., assimilation and contrast) for which each may yield different consequences for TSE.

Generally, the contextual effects that were calculated in this study indicate that the judgmental processes governing teachers' interpretation and integration of information into self-efficacy appraisals can be partially explained using the contrast, but not the assimilation, hypothesis. Consistent with Hypothesis 2a, the small to medium contextual effect of a close classroom relational climate, above and beyond the association of student–teacher relationship quality with TSE at L1, was negative. At a conceptual level, this suggests that teachers' judgments of a safe and secure classroom relational climate may lead them to perceive their relationship experiences with individual students in a less positive light, resulting in lower levels of TSE toward these students. Therefore, our findings somewhat undermine the attachment-based notion that secure domain-specific models represent a strong cognitive source that positively colors relationship-specific information that carries value for teachers' efficacy, above the stability of relationship-specific models (e.g., Overall et al., 2003; Sibley & Overall, 2010).

The contrast effect for closeness may point toward several interesting assumptions to help explain the processes governing the interpretation and integration of information into appraisals of TSE. In some cases, for instance, teachers' tendency to contrast their dyadic relationship perceptions away from the classroom standard could have been the result of their beliefs that the relationship with an individual student can still attain a similar degree of warmth and openness (cf. Mussweiler et al., 2004). This assumption is compatible with research by Chang and Davis (2009), suggesting that teachers' emotional responses toward individual students during classroom events may not only be determined by their appraisals of those specific events, but also by past experiences. Hence, even though teachers characterize relationships with individual students as relatively close, they may interpret efficacy-relevant events with those students as less positive when their past experiences give reason to believe that the relationship will never reach the same standard as their relationships with other students in class. In this way, teachers' perceptions of the classroom relational climate may negatively contribute to their daily experiences with individual students and subsequently erode their sense of efficacy.

Similarly, the contrast effect for closeness may also be the result of teachers' tendency to selectively focus on the ways their relationships with individual students are different from the classroom relational standard. When teachers are faced with multiform self-efficacy information in class, they can be presumed to handle the cognitive strain by excluding information and relying on only a few salient instances with students that spring readily to mind (Bandura, 1997). Possibly, teachers who generally believed their students were well and could use them as a source of affective support in class were more strongly influenced by negative instances with individual students that contrasted their positive outlook on the classroom relational climate. By mis-weighing or even ignoring particular information, teachers may have felt less efficacious than would be expected based on their dyadic relationship (Bandura, 1997).

It is somewhat surprising that only our findings regarding closeness, but not conflict, lent credence to the contrast hypothesis. An explanation for this unexpected finding may be that contrast and assimilation effects could have occurred at the same time. As such, these two judgment processes of moving away versus moving toward the classroom relational context might have cancelled each other out, leading to a non-significant contextual effect of a conflictual classroom climate, above the effect of conflict at L1 (cf. Marsh et al., 2000). To some degree, our analyses of climate effects seemed to confirm this assumption. Whereas the association between classroom-level Closeness and TSE was non-significant, the negative climate effect of Conflict on TSE at L2 was significant and moderate in size. This negative association could have conflated the assimilation and contrast effects of a conflictual classroom climate. This suggests

that the net effect of the two counterbalancing judgment processes is heavily dependent upon which of both effects outweighs the other (Chmielewski et al., 2013).

4.3. Limitations

The present study's results should be considered in light of several limitations. A first caveat is that the data in our study were cross-sectional and correlational in nature. Although our aim was only to provide initial evidence for the assimilation and contrast hypotheses, it should be noted that we cannot draw firm conclusions about causal relationships in this study. Following Bandura's (1997) model of triadic reciprocal causation, it is likely that reciprocal relationships existed between teachers' relationship experiences and their sense of efficacy. In any attempt to disentangle the direction of effects, future researchers are therefore advised to employ longitudinal, cross-lagged (multilevel) designs.

In relation to this, we made a deliberate decision to estimate closeness and conflict in separate models based on both theoretical and empirical considerations. Yet, incorporating closeness and conflict within a single model has the potential to influence the results and help understand the contrasting findings observed in previous research. Future researchers are therefore encouraged to consider analyzing these relationship dimensions jointly. As such, this could gain a clearer understanding of their combined effects and their implications for the broader research landscape.

Third, it should be noted that the nature of our sample might have affected teachers' responses on the Student-Specific TSES and STRS. Although we made a conscious and relatively successful effort to select a wide range of schools that were demographically diverse in terms of geographical spread, denomination, school size, urbanicity, and characteristics of the student population, the sample still might not be fully representative of the total population of schools, teachers, and students. In any attempt to replicate the results, it is therefore recommended that future researchers consider studies with different samples as these may yield varying results.

Fourth, in the design of the present study, the affective quality of teachers' relationships with individual students was not only assessed by teacher reports at L1, but subsequently aggregated at L2 and used as a class-level indicator of classroom relational climate, in which dyad-level idiosyncrasies were averaged out. Although this design has become quite common, it should be noted that teachers' perceptions of the classroom relational climate were based on their ratings of dyadic relationships with eight randomly selected students only. However, Snijders and Bosker (1999) have previously argued that inclusion of all students from participating teachers' classrooms is needless when the cluster size of the sample is sufficient, which was the case in our study (cf. Lüdtke et al., 2008). Furthermore, factor loadings of the indicators of our latent variables were relatively large and ICC2 values, ranging between 0.66 and 0.70, were sufficient. This not only resulted in reliable aggregated scores of closeness and conflict at L2, but also indicates that randomly selecting eight students from each teachers' classroom is sufficient to obtain consistent results.

A fifth limitation is related to our student-specific self-efficacy measure. Prior research (e.g., Zee, Koomen, et al., 2016) has indicated that teachers' self-efficacy, despite reflecting some degree of trait variability, may fluctuate across realms of activity and the students toward whom their behaviors and actions are directed. Instead of capturing various domains of TSE, however, we treated those domains as indicators of a more general self-efficacy construct at L1 and L2 to avoid multicollinearity problems. To further elucidate the processes underlying the link between relationship quality and TSE, it may be helpful to take account of teachers' sense of efficacy across distinct domains that capture the full breadth of their daily activities.

Finally, our investigation of the processes governing the interpretation and integration of information into appraisals of TSE in the context of classroom-level and dyadic relationships was based on teacher questionnaires only. Although this might have led to an overestimation of the strength of associations, it can also be argued that such self-reports are most preferable as teachers are likely to construct their self-efficacy from their own self-knowledge and experiences with students in class. Still, it would be useful for future research to employ alternative methods as well, including interviews or observations, to further validate the present study's findings.

4.4. Theoretical and practical implications

Despite these limitations, the importance of exploring the ways in which teachers judge efficacy-relevant sources of information in the context of dyad- and classroom-level relationships is highlighted by several implications. First, our findings speak to the importance of investigating relationship quality and TSE at multiple levels of analysis. Early attachment-based research has previously implied that teachers' domain-specific representational models may be equivalent to an aggregation of different specific models (e.g., Bartholomew & Horowitz, 1991). However, our findings seem to suggest that what is assessed at the classroom level is not redundant with what is assessed by teachers' perceptions of specific dyadic relations. Specifically, teachers' domain-specific and relationship-specific models are likely to reflect two distinct models that are differentially related to teachers' self-efficacy toward classrooms and specific students. Hence, to give teachers the greatest chance of success and sustain them as they meet new challenges in class, teacher training and professional development programs should be tailored to relationship building at either the classroom level or student-specific level.

Second, the results of our study clearly show the complexity of how teachers process multidimensional efficacy information. Even though teachers' perceptions of closeness and conflict are moderately related (e.g., Koomen et al., 2012) they are likely to vary in their informativeness. In our study, it seems that closeness, but not conflict, at the classroom-level may contribute unique information and change the particular meaning of warmth and open communication between teacher and child for teachers' sense of efficacy. Conceivably, even though teachers characterize relationships with individual students as relatively close, they may interpret particular efficacy-relevant events with those students as less positive when their past experiences give reason to believe that the relationship will never reach the same standard as their relationships with other students in class. Helping teachers be aware of how past experiences

with students may color their appraisals and emotions during specific events and interactions with these students may therefore be an important step forward in the process of increasing their TSE. Yet, more research is evidently needed to further disentangle potential assimilation and contrast effects of the relational classroom climate on teachers' sense of efficacy toward individual students.

References

Aldridge, J., & Fraser, B. (2018). Teachers' perceptions of the organisational climate: A tool for promoting instructional improvement. *School Leadership & Management, 38*, 323–344. https://doi.org/10.1080/13632434.2017.1411899.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. W.H. Freeman.

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*, 226–244. https://doi.org/10.1037/0022-3514.61.2.226.

Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of General Psychology, 5*, 323–370. https://doi.org/10.1037/1089-2680.5.4.323.

Bentler, P. M. (1992). On the fit of models to covariances and methodology to the bulletin. *Psychological Bulletin, 112*, 400–404. https://doi.org/10.1037/0033-2909.112.3.400.

Blain, M. D., Thompson, J. M., & Whiffen, V. E. (1993). Attachment and perceived social support in late adolescence: The interaction between working models of self and others. *Journal of Adolescent Research, 8*, 226–241. https://doi.org/10.1177/074355489382006.

Bosman, R. J., Zee, M., de Jong, P. F., & Koomen, H. M. (2021). Using relationship-focused reflection to improve teacher–child relationships and teachers' student-specific self-efficacy. *Journal of School Psychology, 87*, 28–47. https://doi.org/10.1016/j.jsp.2021.06.001.

Bowlby, J. (1969/1982). *Attachment and loss* (2nd ed.) (2nd ed., Vol. 1. Attachment). Basic Books (Original work published 1969).

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. *SageFocus Editions, 154*, 136.

Burić, I., & Kim, L. E. (2020). Teacher self-efficacy, instructional quality, and student motivational beliefs: An analysis using multilevel structural equation modeling. *Learning and Instruction, 66*, Article 101302. https://doi.org/10.1016/j.learninstruc.2019.101302.

Capa Aydin, T., & Woolfolk Hoy, A. (2005). What predicts teacher self-efficacy. *Academic Exchange Quarterly, 9*, 123–128.

CBS Statline. (2015a). (Speciaal) basisonderwijs; culturele minderheden, (achterstands)leerlingen. [(Special) primary education; cultural minorities, (at-risk) students]. Retrieved from http://statline.cbs.nl/Statweb/.

CBS Statline. (2015b). (Speciaal) basisonderwijs en speciale scholen; leerlingen, schoolregio. [(Special) primary education and special schools; students, school region]. Retrieved from http://statline.cbs.nl/Statweb/.

Chang, M. L. (2013). Toward a theoretical model to understand teacher emotions and teacher burnout in the context of student misbehavior: Appraisal, regulation and coping. *Motivation and Emotion, 37*, 799–817. https://doi.org/10.1007/s11031-012-9335-0.

Chang, M. L., & Davis, H. A. (2009). Understanding the role of teacher appraisals in shaping the dynamics of their relationships with students: Deconstructing teachers' judgments of disruptive behavior/students. In P. A. Schutz, & M. Zembylas (Eds.), *Advances in teacher emotion research* (pp. 95–127). Springer.

Chmielewski, A. K., Dumont, H., & Trautwein, U. (2013). Tracking effects depend on tracking type: An international comparison of students' mathematics self-concept. *American Educational Research Journal, 50*, 925–957. https://doi.org/10.3102/0002831213489843.

Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment, 6*, 284–290. https://doi.org/10.1037/1040-3590.6.4.284.

Collins, N. L., & Feeney, B. C. (2004). Working models of attachment shape perceptions of social support: Evidence from experimental and observational studies. *Journal of Personality and Social Psychology, 87*, 363–383. https://doi.org/10.1037/0022-3514.87.3.363.

Collins, N. L., Ford, M. B., Guichard, A. C., & Allard, L. M. (2006). Working models of attachment and attribution processes in intimate relationships. *Personality and Social Psychology Bulletin, 32*, 201–219.

Collins, N. L., & Read, S. J. (1994). Cognitive representations of adult attachment: The structure and function of working models. In K. Bartholomew, & D. Perlman (Eds.), *Advances in personal relationships, Vol. 5: Attachment processes in adulthood (pp. 53–90)* (Jessica-Kingsley).

Corbin, C. M., Alamos, P., Lowenstein, A. E., Downer, J. T., & Brown, J. L. (2019). The role of teacher-student relationships in predicting teachers' personal accomplishment and emotional exhaustion. *Journal of School Psychology, 77*, 1–12. https://doi.org/10.1016/j.jsp.2019.10.001.

Crittenden, P. M. (1990). Internal representational models of attachment relationships. *Infant Mental Health Journal, 11*, 259–277.

Fackler, S., Malmberg, L. E., & Sammons, P. (2021). An international perspective on teacher self-efficacy: Personal, structural and environmental factors. *Teaching and Teacher Education, 99*, Article 103255. https://doi.org/10.1016/j.tate.2020.103255.

Fang, J., Huang, X., Zhang, M., Huang, F., Li, Z., & Yuan, Q. (2018). The big-fish-little-pond effect on academic self-concept: A meta-analysis. *Frontiers in Psychology, 9*, 1569. https://doi.org/10.3389/fpsyg.2018.01569.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*, 117–140.

Geerlings, J., Thijs, J., & Verkuyten, M. (2018). Teaching in ethnically diverse classrooms: Examining individual differences in teacher self-efficacy. *Journal of School Psychology, 67*, 134–147. https://doi.org/10.1016/j.jsp.2017.12.001.

Gillath, O., & Shaver, P. R. (2007). Effects of attachment style and relationship context on selection among relational strategies. *Journal of Research in Personality, 41*, 968–976. https://doi.org/10.1016/j.jrp.2006.11.003.

Guo, Y., Dynia, J. M., & Lai, M. H. (2021). Early childhood special education teachers' self-efficacy in relation to individual children: Links to children's literacy learning. *Early Childhood Research Quarterly, 54*, 153–163. https://doi.org/10.1016/j.ecresq.2020.09.002.

Guo, Y., Justice, L. M., Sawyer, B., & Tompkins, V. (2011). Exploring factors related to preschool teachers' self-efficacy. *Teaching and Teacher Education, 27*, 961–968. https://doi.org/10.1016/j.tate.2011.03.008.

Guo, Y., McDonald Connor, C., Yang, Y., Roehring, A. D., & Morrison, F. J. (2012). The effects of teacher qualification, teacher self-efficacy, and classroom practices on fifth graders' literacy outcomes. *The Elementary School Journal, 113*, 3–24. https://doi.org/10.1086/665816.

Hajovsky, D. B., Chesnut, S. R., & Jensen, K. M. (2020). The role of teachers' self-efficacy beliefs in the development of teacher-student relationships. *Journal of School Psychology, 82*, 141–158. https://doi.org/10.1016/j.jsp.2020.09.001.

Helson, H. (1964). *Adaptation-level theory: An experimental and systematic approach to behavior*. Harper and Row.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55. https://doi.org/10.1080/10705519909540118.

Hudson, N. W., Fraley, R. C., Chopik, W. J., & Heffernan, M. E. (2015). Not all attachment relationships develop alike: Normative cross-sectional age trajectories in attachment to romantic partners, best friends, and parents. *Journal of Research in Personality, 59*, 44–55. https://doi.org/10.1016/j.jrp.2015.10.001.

Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology, 102*, 741–756.

Klassen, R. M., Tze, V. M., Betts, S. M., & Gordon, K. A. (2011). Teacher efficacy research 1998–2009: Signs of progress or unfulfilled promise? *Educational Psychological Review, 23*, 21–43. https://doi.org/10.1007/s10648-010-91418.

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). Guilford.

Koomen, H. M. Y., Verschueren, K., Van Schooten, E., Jak, S., & Pianta, R. C. (2012). Validating the student-teacher relationship scale: Testing factor structure and measurement invariance across child gender and age in a Dutch sample. *Journal of School Psychology, 50*, 215–234. https://doi.org/10.1016/j.jsp.2011.09.001.

Kunemund, R. L., Nemer McCullough, S., Williams, C. D., Miller, C. C., Sutherland, K. S., Conroy, M. A., & Granger, K. (2020). The mediating role of teacher self-efficacy in the relation between teacher–child race mismatch and conflict. *Psychology in the Schools, 57*, 1757–1770. https://doi.org/10.1002/pits.22419.

Künsting, J., Neuber, V., & Lipowsky, F. (2016). Teacher self-efficacy as a long-term predictor of instructional quality in the classroom. *European Journal of Psychology of Education, 31*, 299–322. https://doi.org/10.1007/s10212-015-0272-7.

Lambert, R. G., McCarthy, C., O'Donnell, M., & Wang, C. (2009). Measuring elementary teacher stress and coping in the classroom: Validity evidence for the classroom appraisal of resources and demands. *Psychology in the Schools, 10*, 973–988. https://doi.org/10.1002/pits.20438.
Little, T. D. (2013). *Longitudinal structural equation modeling.* The Guilford Press.
Lüdtke, O., Marsh, H. W., Robitzsch, A., & Trautwein, U. (2011). A 2 × 2 taxonomy of multilevel latent contextual models: Accuracy–bias trade-offs in full and partial error correction models. *Psychological Methods, 16*, 444–467. https://doi.org/10.1037/a0024376.
Lüdtke, O., Marsh, H. W., Robitzsch, A., Trautwein, U., Asparouhov, T., & Muthén, B. (2008). The multilevel latent covariate model: A new, more reliable approach to group-level effects in contextual studies. *Psychological Methods, 13*(3), 203–229.
Marsh, H. W. (1986). Verbal and mathematics self-concepts: An internal/external frame of reference model. *American Educational Research Journal, 23*, 129–149.
Marsh, H. W. (1987). The big-fish-little-pond effect on academic self-concept. *Journal of Educational Psychology, 79*, 280–295. https://doi.org/10.1037/0022-0663.79.3.280.
Marsh, H. W., & Craven, R. G. (2006). Reciprocal effects of self-concept and performance from a multidimensional perspective: Beyond seductive pleasure and unidimensional perspectives. *Perspectives on Psychological Science, 1*(2), 133–163. https://doi.org/10.1111/j.1745-6916.2006.00010.x.
Marsh, H. W., & Hau, K. (2004). Explaining paradoxical relations between academic self-concepts and achievements: Cross-cultural generalizability of the internal/external frame of reference predictions across 26 countries. *Journal of Educational Psychology, 96*, 56–67.
Marsh, H. W., Kong, C. K., & Hau, K. T. (2000). Longitudinal multilevel models of the big-fish-little-pond effect on academic self-concept: Counterbalancing contrast and reflected-glory effects in Hong Kong schools. *Journal of Personality and Social Psychology, 78*, 337–349. https://doi.org/10.1037/0022-3514.78.2.337.
Marsh, H. W., Lüdtke, O., Nagengast, B., Trautwein, U., Morin, A. J. S., Abduljabbar, A. S., & Köller, O. (2012). Classroom climate and contextual effects: Conceptual and methodological issues in the evaluation of group-level effects. *Educational Psychologist, 47*, 106–124. https://doi.org/10.1080/00461520.2012.670488.
Marsh, H. W., Lüdtke, O., Robitzsch, A., Trautwein, U., Asparouhov, T., Muthén, B. O., & Nagengast, B. (2009). Doubly-latent models of school contextual effects: Integrating multilevel and structural equation approaches to control measurement and sampling error. *Multivariate Behavioral Research, 44*, 764–802.
Meehl, P. E. (1992). Factors and taxa, traits and types, differences of degree and differences in kind. *Journal of Personality, 60*, 117–174. https://doi.org/10.1111/j.1467-6494.1992.tb00269.x.
Mikulincer, M. (1997). Adult attachment style and information processing: Individual differences in curiosity and cognitive closure. *Journal of Personality and Social Psychology, 72*, 1217–1230.
Mikulincer, M., Gillath, O., & Shaver, P. R. (2002). Activation of the attachment system in adulthood: Threat-related primes increase the accessibility of mental representations of attachment figures. *Journal of Personality and Social Psychology, 83*, 881–895. https://doi.org/10.1037/0022-3514.83.4.881.
Mikulincer, M., & Shaver, P. R. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. *Advances in Experimental Social Psychology, 35*, 53–152.
Ministry of Education, Culture, and Science. (2021). *Trendrapportage Arbeidsmarkt Leraren po, vo en mbo 2021 [trend report labour market teacher primary, secondary, and tertiary education 2021].* Den Haag: Ministry of Education, Culture, and Science.
Morris, D. B., Usher, E. L., & Chen, J. A. (2017). Reconceptualizing the sources of teaching self-efficacy: A critical review of emerging literature. *Educational Psychology Review, 29*, 795–833. https://doi.org/10.1007/s10648-016-9378-y.
Mussweiler, T., Rüter, K., & Epstude, K. (2004). The ups and downs of social comparison: Mechanisms of assimilation and contrast. *Journal of Personality and Social Psychology, 87*, 832–844. https://doi.org/10.1037/0022-3514.87.6.832.
Muthén, L. K., & Muthén, B. O. (1998–2012). *Mplus user's guide* (7th ed.). Muthén & Muthén.
Nagengast, B., & Marsh, H. W. (2012). Big fish in little ponds aspire more: Mediation and cross-cultural generalizability of school-average ability effects on self-concept and career aspirations in science. *Journal of Educational Psychology, 104*, 1033–1053.
Neugebauer, S., Hopkins, M., & Spillane, J. (2019). Social sources of teacher self-efficacy: The potency of teacher interactions and proximity to instruction. *Teachers College Record, 121*, Article 040305.
Overall, N. C., Fletcher, G. J. O., & Friesen, M. D. (2003). Mapping the intimate relationship mind: Comparisons between three models of attachment representations. *Personality and Social Psychology Bulletin, 29*, 1479–1493. https://doi.org/10.1177/0146167203251519.
Pianta, R. C., Hamre, B., & Stuhlman, M. (2003). Relationships between teachers and children. In W. M. Reynolds, & G. E. Miller (Eds.), *Vol. 7. Handbook of psychology: Educational psychology* (pp. 199–234). Wiley.
Pierce, T., & Lydon, J. E. (2001). Global and specific relational models in the experience of social interactions. *Journal of Personality and Social Psychology, 80*, 613–631.
Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (Vol. 1). Sage.
Salvatore, J. E., Kuo, S. I., Steele, R. D., Simpson, J. A., & Collins, W. A. (2011). Recovering from conflict in romantic relationships: A developmental perspective. *Psychological Science, 22*, 376–383.
Sawyer, B. E., O'Connell, A., Bhaktha, N., Justice, L. M., Santoro, J. R., & Rhoad Drogalis, A. (2022). Does teachers' self-efficacy vary for different children? A study of early childhood special educators. *Topics in Early Childhood Special Education, 42*(1), 50–63. https://doi.org/10.1177/0271121420906528.
Schwab, S. (2019). Teachers' student-specific self-efficacy in relation to teacher and student variables. *Educational Psychology, 39*, 4–18. https://doi.org/10.1080/01443410.2018.1516861.
Seaton, M., Marsh, H. W., & Craven, R. G. (2010). Big-fish-little-pond effect: Generalizability and moderation—Two sides of the same coin. *American Educational Research Journal, 47*, 390–433. https://doi.org/10.3102/0002831209350493.
Shin, T., Davidson, M. L., & Long, J. D. (2009). Effects of missing data methods in structural equations modeling with nonnormal data. *Structural Equation Modeling, 16*, 70–98. https://doi.org/10.1080/10705510802569918.
Sibley, C. G., & Overall, N. C. (2008). Modeling the hierarchical structure of attachment representations: A test of domain differentiation. *Personality and Individual Differences, 44*, 238–249.
Sibley, C. G., & Overall, N. C. (2010). Modeling the hierarchical structure of personality-attachment associations: Domain diffusion versus domain differentiation. *Journal of Social and Personal Relationships, 27*, 47–70.
Siciliano, M. D. (2016). It's the quality not the quantity of ties that matters: Social networksand self-efficacy beliefs. *American Educational Research Journal, 53*, 227–262. https://doi.org/10.3102/0002831216629207.
Simpson, J. A., Rholes, W. S., & Phillips, D. (1996). Conflict in close relationships: An attachment perspective. *Journal of Personality and Social Psychology, 71*, 899–914.
Skaalvik, E. M., & Skaalvik, S. (2002). Internal and external frames of reference for academic self-concept. *Educational Psychologist, 37*, 233–244. https://doi.org/10.1207/S15326985EP3704_3.
Skaalvik, E. M., & Skaalvik, S. (2017). Motivated for teaching? Associations with school goal structure, teacher self-efficacy, job satisfaction and emotional exhaustion. *Teaching and Teacher Education, 67*, 152–160. https://doi.org/10.1016/j.tate.2017.06.006.
Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling.* Sage Publishers.
Spilt, J. L., Koomen, H. M., Thijs, J. T., & van der Leij, A. (2012). Supporting teachers' relationships with disruptive children: The potential of relationship-focused reflection. *Attachment & Human Development, 14*, 305–318. https://doi.org/10.1080/14616734.2012.672286.
Spilt, J. L., & Koomen, H. M. Y. (2009). Widening the view on teacher–child relationships: Teachers' narratives concerning disruptive versus nondisruptive children. *School Psychology Review, 38*, 86–101.
Spilt, J. L., Koomen, H. M. Y., & Thijs, J. T. (2011). Teacher wellbeing: The importance of teacher–student relationships. *Educational Psychology Review, 23*, 457–477. https://doi.org/10.1007/s10648-011-9170-y.
Stipek, D., & Miles, S. (2008). Effects of aggression on achievement: Does conflict with the teacher make it worse? *Child Development, 79*, 1721–1735. https://doi.org/10.1111/j.1467-8624.2008.01221.x.
Sutherland, K. S., & Oswald, D. P. (2005). The relationship between teacher and student behavior in classrooms for students with emotional and behavioral disorders: Transactional processes. *Journal of Child and Family Studies, 14*, 1–14. https://doi.org/10.1007/s10826-005-1106-z.

Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*, 783–805. https://doi.org/10.1016/S0742-051X(01)00036-1.

Tschannen-Moran, M., & Woolfolk Hoy, A. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education, 23*, 944–956. https://doi.org/10.1016/j.tate.2006.05.003.

Van Mieghem, A., Struyf, E., & Verschueren, K. (2022). The relevance of sources of support for teachers' self-efficacy beliefs towards students with special educational needs. *European Journal of Special Needs Education, 37*(1), 28–42. https://doi.org/10.1080/08856257.2020.1829866.

Verschueren, K., & Koomen, H. M. (2012). Teacher–child relationships from an attachment perspective. *Attachment & Human Development, 14*, 205–211. https://doi.org/10.1080/14616734.2012.672260.

Yada, A., Tolvanen, A., Malinen, O. P., Imai-Matsumura, K., Shimada, H., Koike, R., & Savolainen, H. (2019). Teachers' self-efficacy and the sources of efficacy: A cross-cultural investigation in Japan and Finland. *Teaching and Teacher Education, 81*, 13–24. https://doi.org/10.1016/j.tate.2019.01.014.

Zee, M., de Jong, P. F., & Koomen, H. M. (2017). From externalizing student behavior to student-specific teacher self-efficacy: The role of teacher-perceived conflict and closeness in the student–teacher relationship. *Contemporary Educational Psychology, 51*, 37–50. https://doi.org/10.1016/j.cedpsych.2017.06.009.

Zee, M., de Jong, P. F., & Koomen, H. M. Y. (2016). Teachers' self-efficacy in relation to individual students with a variety of social-emotional behaviors: A multilevel investigation. *Journal of Educational Psychology, 108*, 1013–1027. https://doi.org/10.1037/edu0000106.

Zee, M., & Koomen, H. (2020). Engaging children in the upper elementary grades: Unique contributions of teacher self-efficacy, autonomy support, and student-teacher relationships. *Journal of Research in Childhood Education, 34*, 477–495. https://doi.org/10.1080/02568543.2019.1701589.

Zee, M., Koomen, H. M., & de Jong, P. F. (2018). How different levels of conceptualization and measurement affect the relationship between teacher self-efficacy and students' academic achievement. *Contemporary Educational Psychology, 55*, 189–200. https://doi.org/10.1016/j.cedpsych.2018.09.006.

Zee, M., Koomen, H. M., & van der Veen, I. (2013). Student–teacher relationship quality and academic adjustment in upper elementary school: The role of student personality. *Journal of School Psychology, 51*, 517–533. https://doi.org/10.1016/j.jsp.2013.05.003.

Zee, M., & Koomen, H. M. Y. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research, 86*, 981–1015. https://doi.org/10.3102/0034654315626801.

Zee, M., Koomen, H. M. Y., Jellesma, F. C., Geerlings, J., & de Jong, P. F. (2016). Inter-and intra-individual differences in teachers' self-efficacy: A multilevel factor exploration. *Journal of School Psychology, 55*, 39–56. https://doi.org/10.1016/j.jsp.2015.12.003.

Zee, M., & Rudasill, K. M. (2021). Catching sight of children with internalizing symptoms in upper elementary classrooms. *Journal of School Psychology, 87*, 1–17. https://doi.org/10.1016/j.jsp.2021.05.002.

Zee, M., Rudasill, K. M., & Bosman, R. J. (2021). A cross-lagged study of students' motivation, academic achievement, and relationships with teachers from kindergarten to 6th grade. *Journal of Educational Psychology, 113*, 1208–1226. https://doi.org/10.1037/edu0000574.

Zee, M., Rudasill, K. M., & Roorda, D. L. (2020). "Draw me a picture" student-teacher relationship drawings by children displaying externalizing, internalizing, or prosocial behavior. *The Elementary School Journal, 120*, 636–666. https://doi.org/10.1086/708661.