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Through the teacher's mind

Understanding and improving teacher-child relationships in elementary school

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Chapter 4

*Improving teacher–child relationships
using relationship-focused reflection: A
case study*

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CHAPTER 4

Improving teacher-child relationships using relationship-focused reflection: A case study

This study evaluated LLInC (Leerkracht-Leerling Interactie Coaching in Dutch, or Teacher Student Interaction Coaching; Koomen & Spilt, 2010-2016), an intervention targeted at teachers' mental representations to improve dyadic teacher-child relationship quality. Four teachers and eight children from Dutch elementary schools participated in this case study. Teachers' global judgments of relationship quality improved from pretest to posttest for the majority of teacher-child dyads. Day-to-day perceptions of conflict, closeness, and self-efficacy improved for half of the teacher-child dyads, indicating that for these dyads there was a functional association between the implementation of LLInC and improved teacher-child relationship quality. The results of this study suggest that LLInC is promising, however, the intervention should be further evaluated using a larger, representative sample.

Introduction

There is abundant evidence that positive teacher-child relationships contribute to children's school adjustment, whereas negative teacher-child relationships harm children's development (Roorda, Jak, Zee, Oort, & Koomen, 2017). A subgroup of children shares a long-term negative relationship with their teachers over multiple school years, resulting in poor school adjustment at the end of elementary school (Bosman, Roorda, Van der Veen, & Koomen, 2018; Spilt, Hughes, Wu, Kwok, 2012a). Therefore, it seems important to develop interventions that can break this cycle of negative relationships. Relationship-focused reflection by teachers may be effective in breaking these negative interaction patterns in dyadic teacher-child relationships (Pianta, 1999; Spilt, Koomen, Thijs, & Van der Leij, 2012b). Following parent-child interventions (Slade, Grienenberger, Bernbach, Levy, & Locker, 2005), stimulating teachers to reflect on specific experiences and events that occurred in interaction with an individual child may improve relationship quality. In the present study, a relationship-focused reflection program (Spilt et al., 2012b) was evaluated in eight teacher-child dyads using a multiple-baseline design. This single-subject design offers a methodology

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for improving practices that benefit individuals (e.g., Sanetti, Collier-Meek, Long, Kim, Kratochwill, 2014).

Consistent with parent-child attachment literature (Bowlby, 1969), it is believed that teachers form mental representational models (or internal working models) about relationships with individual children, including internalized affect and cognitions that guide actual behavior within the relationship (Pianta, 1999; Pianta, Hamre, & Stuhlman, 2003). Teachers are believed to construct these models based on experiences gained in earlier attachment relationships, resulting in representational models that influence social interactions in various domains. Mental representations can be child-specific, indicating that a teacher develops feelings, beliefs, and expectations that contain information about the teacher's views of the child, and a view about themselves in interaction with the child (Pianta et al., 2003). It is believed that caregivers also construct domain-specific mental representations (Sibley & Overall, 2008), including feelings and cognitions that refer to a particular relationship domain, such as the teaching domain. More specifically, a teacher also develops domain-specific representations containing generalized expectations of themselves as a teacher, and a teacher's feelings about interacting with all children in the classroom (Pianta et al., 2003; Spilt, Koomen, & Thijs, 2011). Both relationship-specific and domain-specific mental representations can be highly stable over time as feelings and beliefs about interacting with children may reinforce themselves over time. As such, teachers may be inclined to focus on behavior that is similar to the beliefs they already have (Pianta, 1999). For instance, when a teacher feels that interactions with a child are predominantly negative, he or she will be more focused on negative (behavioral) aspects of the child, instead of having a more open mindset about the child. In this way, teachers' mental representations can function as a self-fulfilling prophecy.

Relationship-specific mental representational models of relationships include the formation and quality of affective teacher-child relationships as well as teachers' self-efficacy beliefs through teachers' daily interactions with individual children (Pianta, 1999; Pianta et al., 2003). Researchers usually qualify relationship-specific mental representations of relationships using two attachment-based, affective dimensions: Closeness and conflict (Spilt et al., 2011). Representational models that are mostly negative are generally marked by high levels of conflict, and low levels of closeness (Spilt et al., 2011; Verschueren & Koomen, 2012). Conflict refers to negativity, anger, and discordance in the relationship, whereas closeness refers to warmth, trust, and open communication between a teacher and a child. In addition,

self-efficacy beliefs are seen as part of representational models that guide relationships with individual children (e.g., Grusec, Hastings, & Mammone, 1994). Using a cognitive-behavioral approach, teachers' self-efficacy refers to beliefs about their confidence to organize and execute daily teaching activities in their classroom (Bandura, 1997; Tschannen-Moran & Woolfolk Hoy, 2001). Teachers' self-efficacy beliefs are important for teachers' abilities to continuously motivate, manage, and emotionally support children in their classrooms (Almog & Shechtman, 2007; Tschannen-Moran & Woolfolk Hoy, 2001). In what follows, when teacher-child relationship quality is discussed, this includes both affective components (i.e., teacher-child conflict and closeness) and cognitive-behavioral component (i.e., teachers' self-efficacy beliefs)

Pianta (1999) argued that a way of improving teacher-child relationships is to change inflexible or constrained mental representations of relationships into more flexible and differentiated mental representations. When teachers have a flexible mental representation of their relationship, they have both positive and negative emotions about the child instead of only a global, negative characterization. In addition, mental representational models should include self-efficacy beliefs regarding the teacher's ability to influence the relationship with a child instead of blaming negative relationships entirely on the behavior of the child. Taken together, these changes may lead to a mental representational model of teachers that is more open to new information about interactions, more integrative and balanced, and more responsive to the child (Pianta, 1999). Therefore, Pianta (1999) argued that interventions should start at the representational level rather than at the level of teachers' behavior.

Pianta (1999) presented a framework of how more flexible and differentiated representational models could be achieved. He argued that reflecting on actual feelings, beliefs, and experiences may lead to more flexibility in representational models. From parent-child attachment research, it has been argued that when mothers think about and reflect on their behaviors toward the child, that may be a first step to change their actual parenting behavior (Slade et al., 2005). Reflection, or reflective functioning, refers to the caregiver's capacity to understand the nature and function of their own mental states, as well as the mental states of the child (Fogarty, Steele, Steele, Moran, & Higgitt, 1991). Fogarty et al. (1991) hypothesized that a caregiver who can think about the relationships in terms of mental processes and functions (i.e., a caregiver with reflective abilities), will be more likely to understand the child's behavior, needs, and their interactions.

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In contrast, a caregiver with a limited reflective ability may fail to understand that their own behavior contributes to interpersonal stressors. From empirical research, there is evidence that reflective functioning plays an important role in the intergenerational transmission of attachment (Slade et al., 2005; van IJzendoorn, 1995). Recently, it was found that reflective functioning mediated the association between mental representations of caregiving and maternal sensitivity (Alvarez-Monjaras, McMahon, & Suchman, 2017). Based on theoretical ideas and empirical research, we believed that teachers' relationships with individual children could improve when teachers start to reflect on mental representations of these relationships.

A first step in this process is to uncover and reflect on all conscious and unconscious aspects of the teacher's representational model of the relationship with an individual child (Main, Kaplan, & Cassidy, 1985). In parent-child attachment research, interview techniques are most commonly used to assess mental representational models of relationships (Bretherton, 1990). These interviews often include questions that refer directly to descriptions of actual experiences of interactions with the child, because the parent's affective experiences of the child and the modulation of this experience are related to the specific feelings and beliefs of the parent (Slade, Belsky, Aber, & Phelps, 1999). Uncovering teachers' mental representations through narratives in the context of a semi-structured interview is a first step in improving relationships, as it may facilitate teachers' reflection (Pianta, 1999). A second step is to focus on teachers' narratives to observe certain patterns in their representational models. Pianta (1999) proposes that a consultant or coach is necessary to help summarize the mental representation of the relationship in more general terms using scientific theory. The consultant can provide a new framework for understanding the child and the interaction with the child. When discussing this summary of the representational model with the teacher, the teachers' reflective process may be further activated (Pianta, 1999). More specifically, when teachers fully understand the child's behavior and how they act in relationship to the child, they may be more willing and able to change their behavior.

Based on Pianta's framework and parent-child research, Spilt et al. (2012b) developed the teacher-based coaching intervention: LLInC (Leerkracht-Leerling Interactie Coaching in Dutch, or Teacher Student Interaction Coaching; Koomen & Spilt, 2010-2016). This program was previously known as the Relationship-Focused Reflection Program (RFRP; Spilt et al., 2012b). LLInC stimulates the teacher to reflect on the relationship with one individual child during two sessions, and it is followed by exactly the

same procedure for another child from the classroom. The primary goal of LLInC is to help teachers think about and reflect on their relationship with two children. In the first sessions, LLInC utilizes the Teacher Relationship Interview (TRI; Pianta, 1999) as a tool for eliciting and evaluating relationship narratives of teachers. In the second sessions a consultant summarizes and interprets teachers' narratives in more general terms. This overview of teachers' narratives is discussed with the teacher to further stimulate reflection as a base for improving teacher-child relationship quality (Spilt et al., 2012b).

Spilt and colleagues (2012b) evaluated the effectiveness of LLInC in teachers' relationships with disruptive kindergartners. They compared teacher-child relationship quality in a group of teachers receiving LLInC and a control group of teachers receiving a behavioral intervention. For each teacher, researchers randomly selected two children with relatively high levels of disruptive behavior from the teachers' classroom to be subject of the intervention. Spilt et al. (2012b) used observations to measure teachers' sensitive behavior in interaction with the individual child and questionnaires to measure teacher-child conflict and closeness before and after the intervention program. They found that teachers receiving LLInC displayed increased levels of sensitive behavior whereas teachers in the control group did not. A subgroup of teachers receiving LLInC also reported increases in closeness (i.e., warmth and open communication in the relationship). Teachers who already reported high levels of closeness before LLInC, however, still had the same level of closeness after LLInC. Few teachers also reported a decrease in closeness after LLInC. In addition, a subset of the teachers reported decreases in teacher-child conflict (i.e., negativity and distrust in the relationship). Overall, these results suggest that LLInC was effective in changing teachers' sensitive behaviors, however, only a subset of the teachers had increases in closeness or decreases in conflict (Spilt et al., 2012b).

Present study

In this case study we aimed to further evaluate LLInC as a way of improving teachers' relationships with individual children. This study differed in three specific features from Spilt et al. (2012b). First, we let teachers select children for the intervention based on the degree of relationship difficulties they experienced, instead of selecting children based on the degree of disruptive behavior. Although disruptive behavior is an important risk factor for developing negative teacher-child relationships (Nurmi, 2012), it does not automatically mean that teachers experience also relational difficulties

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with disruptive children. Second, we focused on teachers and children in elementary school, whereas Spilt et al. (2012b) focused on teachers and children in kindergarten.

Third, we used daily measurements to assess changes in teachers' day-to-day experiences of relationships during and after LLInC. By using daily measurements, we can investigate if and when changes in relationships take place. Daily measurements also give insight in the day-to-day experiences of relationships of a teacher rather than, compared to a posttest after the intervention, focusing on a global level of relationship quality based on a longer time period. Attachment theory originally suggested that people with different mental representational models hold different views about interpersonal experiences and relationships (Bowlby, 1969; Bretherton, 1990) as these models are thought to guide how one interprets, perceives and responds to social interaction. However, there is not much information about how these mental representations contribute to teachers' perceptions of day-to-day relationship experiences. Pietromonaco and Feldman Barrett (1997) used diary methods to investigate if day-to-day experiences were related to mental representations of attachment. They concluded that mental representations of relationships are related to how people perceive their everyday social interactions, however, they also found that these daily perceptions of relationship experiences were not completely related to retrospective perceptions of relationships. These different patterns imply that memory also plays a role in attachment-related perceptions (Pietromonaco & Feldman Barrett, 1997). Thus, these daily perceptions of relationship experiences may give additional information about mental representations. Therefore, we investigated how daily perceptions of relationship experiences changed under influence of LLInC as well as whether a global judgment of relationship quality changed from pretest to posttest.

In sum, the present study examined (1) the effects of LLInC on teachers' day-to-day experiences of relationships, including the affective components conflict and closeness, and the cognitive-behavioral component self-efficacy, and (2) the effects of LLInC on teachers' global perceptions of teacher-child relationships. We hypothesize that teachers' perceptions of daily conflict will decrease under influence of LLInC, and that perceptions of daily closeness and self-efficacy will increase after LLInC. We further expect that teachers' global judgment of relationship quality will improve by LLInC.

Method

Selection and participants

Teachers were asked to participate in the present study through messages on social media, more specifically, group-pages for Dutch elementary school teachers. Inclusion criteria were that teachers had to teach the same class for at least two days per week and that they experienced difficulties in the relationship with at least two children in their classroom. Prior to selecting teachers for the current study, the principal researcher conducted an interview by phone with teachers who applied. During this interview, the researcher asked if the teacher experienced difficulties in the relationship or interaction with at least two children in the classroom. Experiencing difficulties could entail various problems, such as interactions characterized by conflict and a lack of positivity, or not knowing how to deal with the child's emotions. Based on this interview, the researcher decided if the teacher could participate in the study. As is common in single-subject designs, intervention effects can be established when at least three different participants are included. By including more than one participant, this provides more confidence in intervention effects through replications of effects three or more times (Kazdin, 2011). Therefore, selection of participants stopped when four teachers met the inclusion criteria (i.e., eight different teacher-child dyads). We selected four teachers to have a sufficient number of participants, even if a teacher dropped out.

Information about the four participating teachers can be found in Table 1. Three teachers were female, and all teachers had a Dutch ethnic background. The teachers had various years of teaching experience, were teaching in different grades, and worked in various school types in the Netherlands. Each teacher nominated two children from their classroom, resulting in a sample of eight children. Teachers reported that all children had a Dutch background (i.e., both parents were born in the Netherlands). In addition, half of the children were diagnosed by a psychiatrist or clinical psychologist (Table 2), of which an Autism Spectrum Disorder was the most prevalent disorder ($n = 4$). Furthermore, teachers reported on children's behaviors using the Dutch Version of the Strengths and Difficulties Questionnaire (SDQ; Van Widenfelt, Goedhart, Treffers, & Goodman, 2003). We derived four subscales from a total of 20 items: Hyperactivity/Inattention, Conduct Problems, Emotional Symptoms, and Prosocial Behavior. All subscales consisted of 5 items, answered on a 5-point Likert scale ranging

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from 1 (definitely does not apply) to 5 (definitely applies). From a different study with a larger, random sample of children in Dutch classrooms ($N = 526$; Zee, de Jong, & Koomen, 2016), we derived mean scores and standard deviations to assess whether children's behavior in the current sample could be considered problematic. The study of Zee et al. (2016) also indicated good psychometric properties for the SDQ, with Cronbach's alphas ranging from .81 to .87. Table 2 showed that the children in the current sample all had problematic behaviors on one or more of the subscales, however, there was large variation in the types and degree of problematic behaviors.

The total sample consisted of eight teacher-child dyads. All names of teachers and children in the present study are pseudonyms. The first teacher, Margret, selected two boys from her classroom: Tony and Scott. She selected Tony because she felt it was complicated to communicate in a friendly way with him. She felt their interactions were mostly negative, whereas she wanted to increase positive conversations between them. Margret thinks that Tony does not like her as a teacher. Margret selected Scott because she felt their relationship was shallow and she had difficulties in understanding his emotions. Margret also found it difficult to talk with him in a positive way, because Scott seems unhappy during the day and is not working together with kids in the classroom. She found it difficult to stimulate Scott on working together with others.

The second teacher, Anne, selected a boy and a girl from her classroom: Seth and Nadia. She selected Seth because she felt it was difficult to understand his emotions and views, leading to multiple misunderstanding in their interactions during the day. Anne felt she needs to care more for Seth to prevent these misunderstandings. She selected Nadia because she feels irritated about how to correct Nadia's impulsive behaviors many times during the day. She also felt hesitant about how to interact with Nadia in a positive way, since most behaviors were negative.

The third teacher, Femke, selected a boy and a girl from her classroom: Daniel and Sara. She selected Daniel for this study because she felt their relationship was predominantly conflictuous. She felt that because of his problematic behavior, she is unable to share positive or warm interactions. Femke selected Sara because she felt difficulties in sensing Sara's changing moods and adjusting her responses to these moods. During these changing moods, most interactions were characterized by conflict and emotional outbursts. Femke felt this resulted in overly dependent behavior of Sara towards Femke.

The fourth teacher, John, selected two boys from his classroom: Ralph and Ingmar. He selected Ralph because he felt irritated about interacting with him. John found it difficult to understand why Ralph behaves the way he does. John described their relationship as shallow, and had difficulties stimulating Ralph's on-task behavior. John's main reason for selecting Ingmar was that he felt their relationship was distant. John felt guilty about their distant relationship, and thought he was not spending enough time with Ingmar.

Study design

For the daily perceptions, we used a multiple-baseline design and for the global judgments of relationship quality, we used a pretest and posttest design (see Figure 1).

Multiple-baseline design.

We used a multiple-baseline design with a follow-up phase to evaluate effects of LLINC on relationship quality in dyadic teacher-child relationships. Multiple-baseline phases were used to evaluate whether change was a result of the implementation of the intervention and not of monitoring daily perceptions (Hawkins, Sanson-Fisher, Shakeshaft, D'Este, & Green, 2007). Teachers filled in online daily questionnaires about their interactions at that specific day with the two selected children from their classroom. Because the intervention about the relationships with the two selected children started at different times (i.e., two sessions about the first selected child, and after that, two sessions about the second selected child), the baseline and follow-up phases for the first four teacher-child dyads differed from the second four teacher-child dyads. More specifically, the first four teacher-child dyads were assigned to predetermined baseline lengths of 7, 8, 9, and 10 measurements. Due to scheduling issues, the last teacher eventually had 12 baseline measurements. After this baseline period, the intervention about the first four teacher-child dyads started, consisting of two sessions of LLInC over two consecutive weeks. As a result, the second four teacher-child dyads had baseline lengths of 15, 16, 17, and 20 measurements. Following this baseline phase, the teachers had the two sessions of LLInC about the second selected child. Daily measurements continued until each teacher-child dyad had at least 14 measurements in the follow-up phase.

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Table 1. Demographic characteristics of the teacher sample.

	Age (years)	Teaching Experience (years)	Working days (per week)	Grade	School type
Margret	42	20	2	5	Regular state-funded (based on Dalton-principles)
Anne	48	3	2/3	4	Regular state-funded, Christian school
Femke	29	9	5	6	State-funded, Special Education
John	38	3	5	3	Regular state-funded

Note. All used names are fictive.

Table 2. Demographic characteristics of the child sample.

	Age	Diagnosis	Hyperactivity	Conduct Problems	Emotional Problems	Prosocial Behavior
<i>Margret</i>						
Tony	10	-	2.60	2.20	2.40	1.60*
Scott	10	ASD, ADHD	2.00	1.20	3.40*	2.60*
<i>Anne</i>						
Seth	9	ASD, Epilepsy	3.20	2.40*	4.40*	2.20*
Nadia	9	-	4.80*	1.80	4.40*	4.80
<i>Femke</i>						
Daniel	11	ASD, ODD	4.60*	4.40*	2.60	1.20*
Sara	11	ASD	2.60	3.40*	3.40*	4.60
<i>John</i>						
Ralph	7	-	4.40*	3.40*	2.20*	3.00*
Ingmar	7	-	4.40*	2.20	2.60	4.00

Note. All used names are fictive. ASD = Autism Spectrum Disorder, ADHD = Attention Deficit Hyperactivity Disorder, ODD = Oppositional Defiant Disorder. * = at least one standard deviation above (Hyperactivity, Conduct Problems, Emotional Problems) or below (Prosocial Behavior) the mean level, indicating problematic behavior.

Pretest-posttest design.

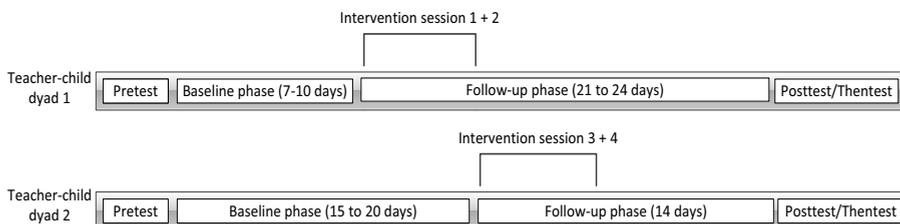
Prior to starting the baseline, teachers completed questionnaires gathering background information about themselves and the selected children. They also provided information about their global perception of the relationship quality with the two selected children (i.e., pretest). Two weeks after the intervention ended, teachers filled out the same questionnaire (i.e., posttest). Because self-reports in intervention research can be confounded by what is called the response shift bias (e.g., bias as a result of changes

in participants' understanding or standard of measurement; Howard & Daily, 1979), we added an extra questionnaire when teachers completed the posttest. This questionnaire, the then-test, consisted of the same questions as the pretest and posttest, however, participants were asked about how they perceived the relationship quality to be prior to the start of the intervention. The posttest and then-test were administered at the same time to increase the likelihood that ratings were made from the same perspective.

Procedure

This study was conducted from February to May in the school year 2016-2017. Ethical approval was granted from the faculty of Social and Behavioral Sciences of the University of Amsterdam (number 2016-CDE-6518). Prior to the research, teachers gave their informed consent for their participation. After they selected two children with whom they experienced difficulties in the relationship, parents of these selected children were informed about the study. All parents gave active informed consent. When all participants agreed to participate in the study, a schedule was made to ensure sufficient baseline periods and to plan four sessions of LLInC. The two selected children were randomly assigned as first or second child of LLInC. Teachers received LLInC from a consultant with a master's in educational psychology. The consultant

Figure 1. Schematic of the study design.



was extensively trained and licensed to give LLInC to teachers. The training consisted of four sessions in which the consultant practiced and received feedback from the developers of LLInC. The consultant practiced giving the interview to a teacher and audio recorded it. Afterwards, a developer of LLInC gave extensive feedback on this interview session. Furthermore, the consultant was shown good en bad practices of LLInC and practiced with asking questions that stimulate reflection in teachers. Daily questionnaires

were administered using Qualtrics. Teachers received a daily reminder via e-mail from the researchers at the end of each school day to fill in the daily questionnaire about their relationships with the two selected children. They could complete the daily questionnaire either on the computer or on their smartphone. The pre-test, post-test, and then-test were administered on paper during a visit from the researcher. Teachers received a gift card of 20 Euros after participating in the study.

Intervention program

The goal of LLInC (see also Spilt et al., 2012b) is to help teachers think about different aspects of their relationship with an individual child. LLInC is aimed at giving teachers insight in their own thoughts, actions and feelings regarding the relationship with an individual child. LLInC consists of four sessions, lasting approximately 45 minutes per session. The first two sessions are about the first selected child, the third and fourth session are about the second selected child.

During the first session (first child) and the third session (second child), a semi-structured interview (Teacher Relationship Interview, TRI; Pianta, 1999; Spilt & Koomen, 2009) about the teacher-child relationship takes place. The interview consists of 12 questions and teachers are asked about recent specific situations and related experiences and feelings they have in interaction with the individual child. The TRI gives insight in 4 different constructs on how a teacher interacts with the child, including the more cognitive-behavioral aspects of the relationship (i.e., sensitivity of discipline, secure base, perspective taking, and intentionality), and four different constructs about the teacher's affective feelings about interacting with the child (i.e., feelings of helplessness, negative affect, positive affect and neutralizing of negative affect; see also Spilt & Koomen, 2009). After the interview, all constructs are coded by the consultant on a 7-point Likert scale. These constructs are then depicted in a relationship profile that represents both strengths and weaknesses of the four constructs on pedagogical practices and the four constructs of teachers' affect regarding the child.

During the second session (first child) and fourth session (second child), the teacher and consultant talk extensively about this relationship profile. For each construct, the consultant explains why she gave that particular score by giving examples of the teacher's experiences that were derived from the interview. After each explanation, the teacher asks questions for clarification or simply reacts on the consultant's interpretation of the constructs. The

different relational strengths and weaknesses stimulate teachers to reflect on the relationship and functions as a base for teachers' initiative to change their approach or feelings regarding the child. After discussing the eight constructs separately, the consultant stimulates reflection by asking questions specifically based on the relationship profile, for instance: "Do you recognize yourself in this relationship profile?", and "Do you see relations between the four aspects of pedagogical practices and the four aspects of feelings about the child?". The consultant also gives the teacher the opportunity to reflect on possible changes of the different constructs, for example: "Do you want to change certain aspects in your interactions or feelings regarding this child?", "When you teach tomorrow, what aspects do you want to be different?", and "What will this change bring you and the child?". During this session, the consultant stimulates the teacher to make notes.

Finally, at the end of the fourth session, the consultant asks the teacher to compare the relationship profiles of both children. The consultant asks the teacher to explain similarities and differences between the profiles and how they may have emerged. In this way, the teacher gets a more general view of herself as a teacher and learns about the aspects that are different for the relationships with the two selected children. This may imply that not only a relationship-specific representational model is activated, but also the domain-specific mental representational model about relationships with children in the classroom.

Measurements

Daily measurements.

Teachers' perceptions of Closeness, Conflict, and Self-Efficacy with individual children were included as daily measurements. Teachers received an online questionnaire for each selected child at the end of each school day to report about their experiences of that particular day. One item per construct was selected from well-validated questionnaires and was adapted slightly for the purpose of receiving information about that particular day. The items for Closeness and Conflict were inspired on the Dutch version of the Student-Teacher Relationship Scale (STRS; Koomen, Verschueren, Van Schooten, Jak, & Pianta, 2012). The item for Closeness was "Today, I felt that I was really available for [name child]", and for Conflict was "Today, I felt angry with [name child]". The item regarding Self-Efficacy was based on the Student Engagement scale of the Student-Specific Teacher Self-Efficacy Scale

(Zee, Koomen, Jellesma, Geerlings, & de Jong, 2016). This item was “Today, I was successful in motivating [name child] for schoolwork”. All items were answered on a 5-point Likert scale ranging from 1 (Definitely does not apply) to 5 (Definitely does apply).

Pretest, posttest, and thentest.

The pre-, post- and then-test consisted of 6 items comprising closeness, conflict, self-efficacy and general conceptions of relationship quality (see Table 3). The items were based on questions of the STRS. For the then-test, we placed the following sentence before each item: “In the weeks prior to LLInC, how did you feel about the following”. All items were answered on a 5-point Likert scale ranging from 1 (Definitely does not apply) to 5 (Definitely does apply). All items together gave an indication of teachers’ global judgement of relationship quality with an individual child, with high ratings indicating an overall positive relationship perception. Cronbach’s alphas were .82, .91, and .72 for the pre-test, post-test, and then-test, respectively, indicating adequate internal consistency. These alphas are consistent to those found for the STRS (Koomen et al., 2012).

Data analysis

Daily measurements. For analyzing single-case data, researchers suggest that it is important to include both visual and quantitative analyses, which complements criteria regarding practical importance of changing behaviors (Manolov, Losada, Chacón, & Sanduvete-Chaves, 2016). We first examined the data using the most important aspects of visual analysis to explore the presence of an effect (Brossart, Vannest, Davis, & Patience, 2014). A systematic analysis of trend and level within and between baseline and follow-up phase was performed (Lane & Gast, 2014). We considered a mean and median level change larger than 0.5 on the Likert-scale sufficient to conclude that a meaningful change took place.

Furthermore, the calculation of Tau or Tau-U was used to support the visual analysis (Parker, Vannest, Davis, & Sauber, 2011). This is a method based on the principles of non-overlapping data across phases. It was chosen because it is one of the most robust methods for analyzing trend data and TAU-U also controls for trend in the baseline phase (Parker et al., 2011). When baseline trend values were higher than 0.3, indicating a problematic trend, the TAU-U trend correction was applied (Parker et al., 2011; Vannest and Ninci, 2015). The TAU(U) effect size can be interpreted as follows: A TAU statistic

of 0.20 is considered small, 0.21 to 0.60 a moderate change, 0.61 to 0.80 a large change, and above 0.81 a large to very large change (Vannest & Ninci, 2015). We analyzed TAU or TAU-U for data of each of the daily measures (e.g., Conflict, Closeness, Self-Efficacy).

After analyzing each outcome for the three constructs of relationship quality separately, a weighted average effect size was calculated for the combined effect sizes for Conflict, Closeness, and Self-Efficacy about the first teacher-child dyads ($n = 4$) and the combined effect sizes of these measures about the second child ($n = 4$). In this way, it was examined which construct changed most after LLInC. In addition, a weighted effect size was calculated over the three daily measures for each teacher-child dyad ($n = 8$). In this way, the overall change in daily interaction per teacher-child dyad could be determined. The weighted effect sizes were calculated by using the inverse of the variance to obtain an omnibus effect size. We consider p-values below .05 as significant and p-values below .10 as borderline significant considering the relatively small amount of daily measurements (Parker et al., 2011).

Pretest-posttest measurements. Reliable Change Indices (RCIs) were used to assess reliable and clinically significant change in teachers' questionnaire scores on pretest, posttest, and then-test (Jacobson & Truax, 1991). RCIs were calculated by dividing the difference between pre- and posttest scores by the standard error of the measurement. An RCI larger than 1.96 indicated a reliable positive change, an RCI smaller than -1.96 a reliable negative change (Jacobson & Truax, 1991).

Table 3. Items of the Pretest and Posttest Measuring Teachers' Global Judgments of Teacher-Child Relationship Quality.

	Items	Aspects of relationship quality
1.	I am satisfied about the relationship with [name child].	General relationship quality
2.	I feel that I am able to get in contact with [name child].	Closeness
3.	I feel effective in interacting with [name child].	Self-efficacy
4.	I feel that I am in tune with what the child is feeling [name child].	Closeness
5.	I feel comfortable in interacting with [name child].	General relationship quality
6.	Dealing with [name child] drains my energy.	Conflict

Results

Day-to-day experiences

Missing data ranged from 1 day to 3 days for each participant. The reason for those missing data was that children were ill these particular days. Missing data were not replaced as this could result in distorted visual analyses. Data on Conflict, Closeness, and Self-Efficacy in teacher-child relationships on each day and the trend over time are depicted in Figure 2 and Figure 3.

Conflict.

To start, four teacher-child dyads (Margret-Tony, Margret-Scott, Anne-Seth, and Anne-Nadia) did not show Conflict in their relationship during the baseline phase and the follow-up phase. Therefore, no change could be expected for these teacher-child dyads and no analyses were done about these dyads. Trend analysis (as shown by trend lines in Figure 2 and Figure 3) indicated that Conflict decreased in the intervention period for the dyads John-Ralph and Femke-Daniel. There was a stable level of Conflict in the relationship of Femke and Sara, and a slight rise in conflict during the follow-up phase for John and Ingmar. Visual analysis further revealed that two out of the eight teacher-child dyads had a sufficient decrease in the level of Conflict from baseline to follow-up phase (John-Ralph: $\Delta M = -0.95$, $\Delta Mdn = -2$; Femke-Sara: $\Delta M = -0.74$, $\Delta Mdn = 0.5$).

Statistical analysis indicated that we had to control for baseline trend in one teacher-child dyad because this trend was larger than 0.3 (see Table 4). Consistent with results of the visual analysis, we found significant decreases in Conflict in the same two teacher-child dyads using TAU(-U) calculations (John-Ralph: TAU-U = -0.53, $p = .027$; Femke-Sara: TAU = -0.43, $p = .044$). These decreases in Conflict can be considered moderate. Furthermore, for the two first teacher-child dyads together (dyad of Femke-Daniel and John-Ralph), the weighted TAU was not significant. In contrast, the weighted TAU for the two second teacher-child dyads (Femke-Sara and John-Ingmar) was significant (TAU = -0.30, $p = .044$). This weighted overall decrease in Conflict could be considered moderate.

Closeness.

Trend analysis revealed that for all dyads, except for Femke-Sara, the level of Closeness increased during the follow-up phase. Furthermore,

visual analysis revealed that four out of the eight teacher-child dyads had an increase in the level of Closeness from baseline to follow-up (Anne-Seth: $\Delta M = +0.57$, $\Delta Mdn = 0$; Margret-Scott: $\Delta M = +1.45$, $\Delta Mdn = +2$; Anne-Nadia: $\Delta M = +0.89$, $\Delta Mdn = +1$; Femke-Sara: $\Delta M = +0.76$, $\Delta Mdn = +1$).

For the TAU-analysis, we controlled for the baseline trend in one of the teacher-child dyads (Table 4). Statistical analysis showed increases in Closeness for the same teacher-child dyads (Anne-Seth: TAU = 0.46, $p = .053$; Margret-Scott: TAU = 0.90, $p < .001$; Anne-Nadia: TAU-U = 0.46, $p = .034$; Femke-Sara: TAU = 0.45, $p = .040$). These effects can be interpreted as moderate to large. For all first teacher-child dyads together the analysis revealed a small, marginally significant increase in Closeness (TAU = 0.23, $p = .056$). For all second teacher-child dyads together, a significant moderate increase in Closeness was found (TAU = 0.43, $p < .001$).

Self-Efficacy.

Trend analysis revealed that 5 out of 8 dyads showed an increasing trend line during the follow-up period. Furthermore, visual analysis revealed that seven out of eight teacher-child dyads had an increase in feelings of Self-Efficacy at follow-up (Margret-Tony: $\Delta M = +0.07$, $\Delta Mdn = +0.5$; John-Ralph: $\Delta M = +0.17$, $\Delta Mdn = +1$; Femke-Daniel: $\Delta M = +0.68$, $\Delta Mdn = 0$; Margret-Scott: $\Delta M = +1.20$, $\Delta Mdn = +1$; Anne-Nadia: $\Delta M = +0.70$, $\Delta Mdn = 0$; Femke-Sara: $\Delta M = +0.68$, $\Delta Mdn = +1$; John-Ingmar: $\Delta M = +0.28$, $\Delta Mdn = +0.5$).

However, based on statistical analyses, only two teacher-child dyads had a significant improvement of Self-Efficacy (Margret-Scott: TAU = 0.73, $p < .001$; Anne-Nadia: TAU = 0.50, $p = .021$). These increases in Self-Efficacy can be considered large for Margret-Scott and moderate for Anne-Nadia. The weighted overall TAU for all first teacher-child dyads was not significant, whereas over all second teacher-child dyads, a significant moderate increase in teachers' feelings of Self-Efficacy was found (TAU = 0.41, $p < .001$).

Overall Change Per Dyad. The analyses above suggest that the strongest effects of LLInC were found for teacher-child Closeness, and mixed effects were found for teacher-child Conflict and Self-Efficacy. However, we still do not know how each teacher-child dyad improved from baseline to follow-up when all constructs are added together. Therefore, we computed the weighted TAU for data series of Conflict, Closeness, and Self-Efficacy for each teacher-child dyad. For this analysis, all measurements of daily Conflict were recoded. Consequently, a higher score on the weighted TAU measure represents better relationship quality. We found that 4 out of 8

dyads significantly improved under influence of LLInC. We found moderate increases in relationship quality for Margret-Scott (TAU = 0.58, $p < .001$), Anne-Nadia (TAU = 0.32, $p = .011$), Femke-Sara (TAU = 0.37, $p = .002$), and John-Ingmar (TAU = 0.30, $p = .028$). Interestingly, all daily improvements were found in teacher-child dyads of the second selected child.

Global relationship perception

Table 5 presents data on the reliable change of teachers' global perceptions of relationship quality for each teacher-child dyad. Using the differences between pretest and posttest, relationship quality improved significantly for five out of eight teacher-child dyads. More specifically, teachers Margret and Femke had an increase in relationship quality with both selected children, whereas John did not have a reliable increase in relationship quality with either of the selected children. Anne only had a reliable increase in her global perceptions of the relationship with Seth.

Next, we calculated the difference between the thentest and posttest. Differences in mean scores of the pretest and thentest ranged from 0.17 to 1 on a 5-point Likert scale, indicating that there was response shift bias in teachers' perceptions of relationship quality. This means that teachers had different references of relationship quality during the pretest compared to the measurement after LLInC. To remove this response shift bias, we compared scores of the thentest with the posttest. RCIs indicated that 7 teacher-child dyads improved in their global judgments of relationship quality. Similar to the results of daily measurements per dyad, we see no reliable improvement for the teacher-child dyad John and Ralph whereas John did have a better relationship with Ingmar after the intervention.

Intervention experiences

After the last posttest measurement, all teachers were asked open ended questions about their experiences of LLInC during a short conversation. All teachers said that they were less familiar with talking about their feelings, and that they appreciated this instead of only focusing on their behavior. Talking about their feelings resulted in noticing earlier that they had certain negative feelings or too few positive feelings about a child. Consequently, they talked more with the student about how his or her behavior affected the teacher's feelings (Margret, Femke), and they tried to pay more attention to positive aspects of relationships with both individual children (Anne, John, Femke). Three teachers mentioned that they became more aware of

their own influence on the relationship with a child (Margret, Femke, Anne). Regarding the different sessions of LLInC, all teachers argued that the second (and fourth) session were most useful. Reasons were that teachers received new insights in several domains of the relationship, including pedagogical practices and feelings about the relationship with the child. The teachers argued that the interviews (first and third session) were necessary parts to discuss certain specific experiences during the second session (and fourth session). Margret and Femke both indicated that the consultant's questions during the second (and fourth session) helped them form new ideas about how to improve their relationship. It also helped them in strengthening their capability beliefs about identifying the necessary steps to improve the relationship. All teachers mentioned that they were motivated after LLInC to find out more about the child's perceptions. Last, John argued that he still needed some additional help to help him regulate the Ingmar's behavior, and Femke realized that she needed more information about how to deal with children's conduct problems.

Discussion

In the present study, we evaluated LLInC, a teacher-based coaching intervention for improving teachers' relationships with elementary school students. We used a pretest-posttest design to examine the influence of LLInC on teachers' global judgments of relationship quality and we used a multiple-baseline design to examine if day-to-day experiences in relationships changed after LLInC.

Regarding teachers' global judgments of relationship quality, we found that in most teacher-child dyads LLInC led to a meaningful increase in teachers' global judgments of relationship quality. This suggests that reflecting on difficult relationships with children may give teachers the necessary tools to improve their relationship perceptions. Talking about their relationship with a child and focusing on feelings, beliefs, and expectations may have increased teachers' positive judgments of their relationship with the selected children (Pianta, 1999). From the qualitative part of this study, it became clear that teachers in general had positive experiences from participating in LLInC and got new ideas about how to change their interactions with the child. The present study thereby provides a first indication that LLInC may not only be helpful for improving relationships with kindergartners (Spilt et al., 2012b), but also for teachers and children in elementary school.

Similar to results of Spilt et al. (2012b), we found that some teacher-

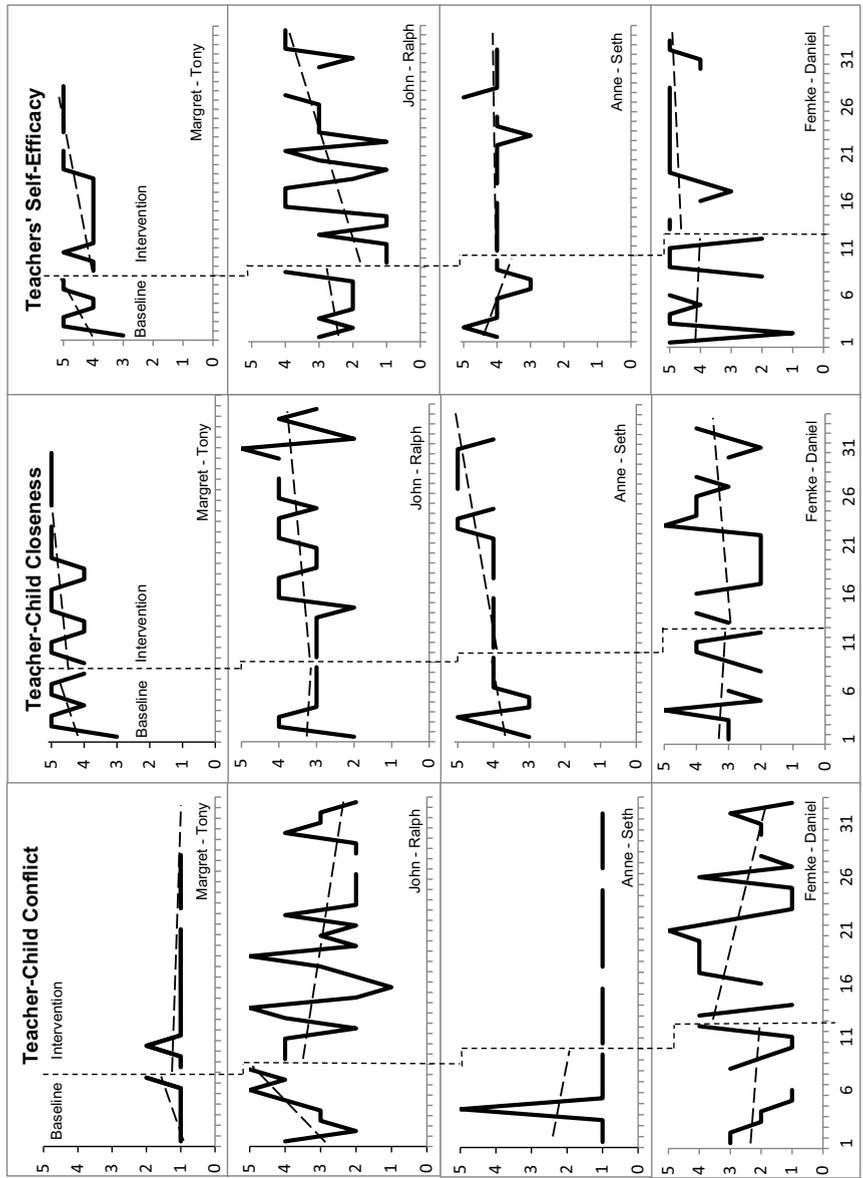
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Table 4. TAU effect sizes for changes of Conflict, Closeness, and Self-Efficacy from baseline to follow-up phase for every first and every second teacher-child dyad.

	TAU	SD _{TAU}	Z-statistic	p-value	90% CI
<i>Conflict</i>					
Margret – Tony	-	-	-	-	-
Anne – Seth	-	-	-	-	-
Femke – Daniel	.20	0.22	0.88	.378	-0.17 – 0.56
John ^a – Ralph	-.53	0.24	-2.21	.027**	-0.92 – -0.13
Weighted	-.15	0.16 ^b	-0.93	.350	-0.42 – 0.12
<i>Closeness</i>					
Margret – Tony	.21	0.26	0.83	.407	-0.21 – 0.64
Anne – Seth	.46	0.24	1.93	.053*	0.07 – 0.84
Femke – Daniel	.01	0.23	0.05	.963	-0.37 – 0.39
John – Ralph	.25	0.24	1.03	.303	-0.15 – 0.64
Weighted	.23	0.12 ^b	1.91	.058*	0.03 – 0.43
<i>Self-Efficacy</i>					
Margret – Tony	0	0.26	0	1	-0.43 – 0.43
Anne – Seth	.11	0.24	0.45	.654	-0.28 – 0.49
Femke – Daniel	.21	0.23	0.92	.359	-0.16 – 0.59
John – Ralph	0.12	0.24	0.48	.632	-0.28 – 0.51
Weighted	0.11	0.12 ^b	0.92	.358	-0.09 – 0.31
<i>Conflict</i>					
Margret – Scott	-	-	-	-	-
Anne – Nadia	-	-	-	-	-
Femke – Sara	-.43	0.22	-1.96	.049**	-0.79 – -0.07
John – Ingmar	-.18	0.20	-0.89	.372	-0.52 – 0.15
Weighted	-.30	0.15 ^b	-2.02	.044*	-0.55 – -0.06
<i>Closeness</i>					
Margret – Scott	.90	0.22	4.05	< .001**	0.54 – 1.00
Anne ^a – Nadia	.46	0.22	2.12	.034**	0.10 – 0.81
Femke – Sara	.45	0.22	2.05	.040**	0.09 – 0.91
John – Ingmar	-.05	0.20	-0.24	.807	-0.39 – 0.29
Weighted	.43	0.11 ^b	3.98	< .001**	0.25 – 0.61
<i>Self-Efficacy</i>					
Margret – Scott	.73	0.22	3.29	< .001**	0.37 – 1.00
Anne – Nadia	.50	0.21	2.31	.021**	0.14 – 0.85
Femke – Sara	.30	0.22	1.40	.163	-0.05 – 0.66
John – Ingmar	.14	0.21	0.66	.507	-0.21 – 0.48
Weighted	.41	0.11 ^b	3.83	< .001**	0.24 – 0.59

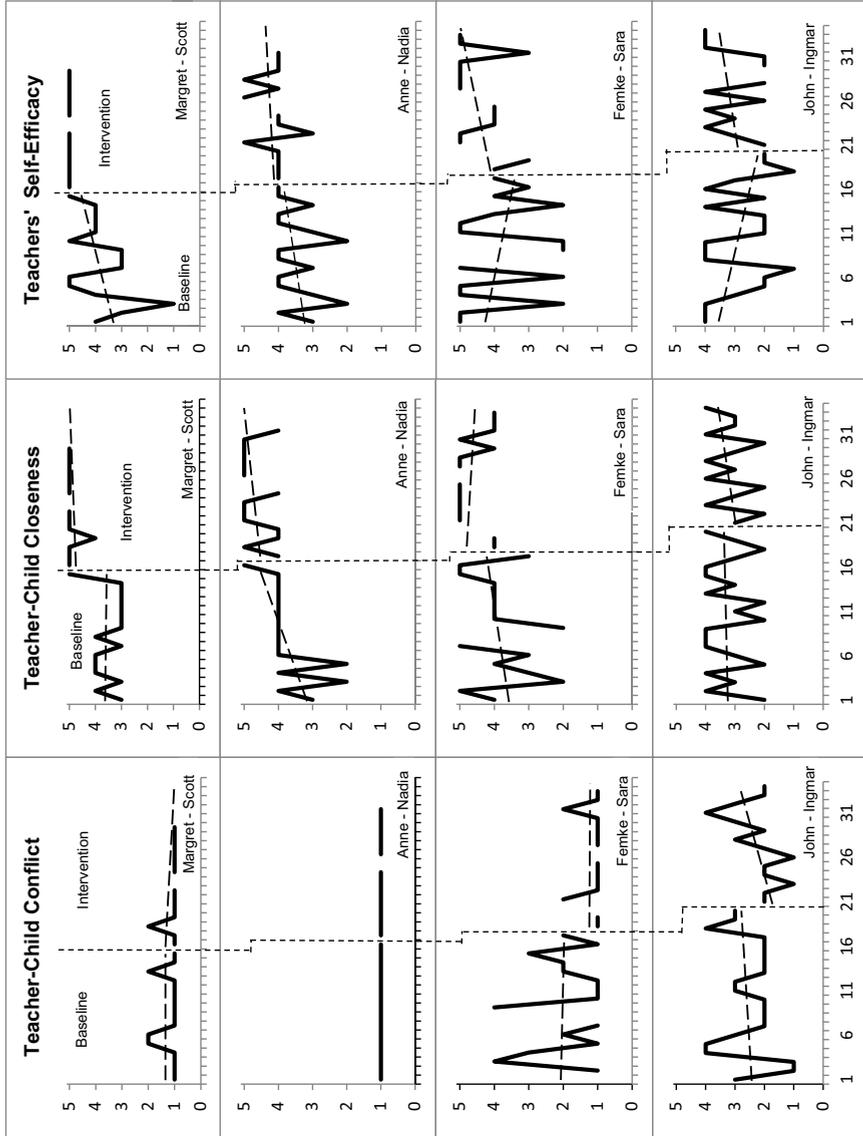
Note. ^a For these comparisons, we applied a correction for baseline-trend. ^b The variance of TAU is reported in this table. * p < .10, ** p < .05.

Figure 2. Daily data on teacher-child Conflict, Closeness, and Teachers' Self-Efficacy for every first teacher-child dyad.



Note: Dashed lines = trend line. For each dyad, the y-axis represents the Likert scale ranging from 1 to 5. For each dyad, the x-axis represents teachers' daily perceptions of relationship quality.

Figure 3. Daily data on teacher-child Conflict, Closeness, and Teachers' Self-Efficacy for every second teacher-child dyad.



Note: Dashed lines = trend line. For each dyad, the y-axis represents the Likert scale ranging from 1 to 5. For each dyad, the x-axis represents teachers' daily perceptions of relationship quality.

child dyads did improve in teacher-perceived relationship quality, whereas others remained stable. Thus, in both studies, a subgroup of teacher-child relationships seems to benefit from LLInC. However, when we removed the response-shift bias of participants in the present study, teachers' global judgments of relationship quality significantly improved in almost all teacher-child dyads. This indicated that there was indeed a response shift bias between the pretest and the posttest. Teachers seemed to have different judgments of the relationship at pretest and posttest. Evaluating the intervention effects by comparing posttest and thentest may have provided more useful information as teachers had the same judgements of the relationship when both questionnaires were administered at the same time. Howard and Dailey (1979) indicated that thentest-posttest differences are more in agreement with independent behavioral observations than pretest-posttest differences. As independent ratings of feelings and perceptions of participants are impossible to obtain, we think that the then-test provided important information about the intervention effects of LLInC.

Some results in the present study are not in line with those of Spilt et al. (2012b). Whereas Spilt et al. (2012b) found that LLInC led to decreases of relationship quality for some dyads, we did not find any decreases in teachers' global judgment of relationship quality. An important difference between the present study and the study by Spilt et al. (2012b) concerns the selection of the teacher-child dyads. Spilt et al. (2012b) selected children for the intervention based on the degree of disruptive behavior relative other children in the classroom, whereas teachers in the present study selected children with whom they experienced difficulties in the relationship. Although relationship problems and disruptive behavior are correlated, it is unlikely that all relationships with children showing disruptive behavior are of low quality. Indeed, the present study showed that only half of the selected children had increased levels of disruptive behavior (i.e., hyperactive behavior or conduct problems), which indicates that selecting children based on relationship problems may have been better than selecting children based on the degree of disruptive behavior. In a larger study, Hamre and colleagues (2008) found that half of the variance of teacher-child conflict could be explained by children's behavioral problems, but that many children had less teacher-child conflict than was predicted by the degree of problem behavior. It is therefore not clear whether all teachers experienced relationship problems in the sample of Spilt et al. (2012b). The authors themselves suggest that a ceiling effect may have influenced the results (Spilt et al., 2012b). The different selection criterion may therefore explain differences in findings between the

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Table 5. Reliable Change Indices for Differences Between Pretest and Posttest and Thentest and Posttest.

	<i>M</i> (Pretest)	<i>M</i> (Thentest)	<i>M</i> (Posttest)	Pretest-Posttest	Thentest-Posttest
Cronbach's alpha ^b	.82	.72	.91	.82 - .91 = .87	.91 - .72 = .81
<i>SD</i> ^b	.74	.61	.85	.74 - .85 = .79	.85 - .61 = .73
RCI					
Margret – Tony	2	2.50	4.33	+5.68*	+4.07*
Margret – Scott	1.50	2	4.67	+7.73*	+5.93*
Anne – Seth	3	2	3.83	+2.02*	+4.07*
Anne – Nadia	3.50	3	4.17	+1.63	+2.60*
Femke – Daniel	1.50	1	3.17	+4.07*	+4.82*
Femke – Sara	3	2.67	4.17	+2.85*	+3.33*
John – Ralph	2.33	1.83	2.67	+0.80	+1.87
John – Ingmar	2	2.17	2.33	+0.80	+2.58*

Note. ^a Cronbach's alphas for each questionnaire at different measurement occasions are averaged. ^b The two standard deviations for each questionnaire at different measurement occasions are averaged. *RCI > 1.96 or < -1.96.

present study and the study of Spilt et al. (2012b).

A special feature of our study was the inclusion of daily measurements to evaluate intervention effects. Overall, we found that 17 out of 20 possible trend lines of daily perceptions were in the expected direction (i.e., increased trend lines for closeness and self-efficacy, and decreased trends for conflict). However, not all teachers' day-to-day relationship experiences (i.e., conflict, closeness, and self-efficacy) for each dyad improved significantly after LLInC. An explanation for these mixed results is that teachers do not experience difficulties on all three dimensions of relationship quality. This was supported by previous research, reporting that teachers did not mention problems in the relationship with the child on all relationship dimensions (Bosman et al., 2018). However, a problem in one of the relationship dimensions can already result in negative student outcomes (Hamre & Pianta, 2001). In the present study, we found that four out of eight teacher-child dyads had floor effects on conflict in the baseline phase. In addition, some teachers reported high levels of closeness or self-efficacy with one of their selected children prior to LLInC. Therefore, we could not expect to find significant effects on all dimensions for each teacher-child dyad.

Four teacher-child dyads showed significant improvements in their

overall day-to-day experiences over time (i.e., weighted closeness, conflict, and self-efficacy per dyad). Interestingly, these overall improvements were all found in the second teacher-child dyad and not in the first teacher-child dyad. An explanation for this finding may be that teachers have become more used to reflecting about the relationship with a child when they start with LLInC for the second child. In the first session of LLInC (i.e., about the relationship with the first child), teachers do not know what to expect of the intervention. In contrast, in the third session (i.e., about the relationship with the second child) teachers already know what is going to happen and can use that knowledge to reflect more thoroughly on the relationship. In between the third and fourth session, they may already start to think more about their feelings and expectations in this particular relationship, about expectations of this relationship profile, and about how to improve this relationship. Consequently, teachers had more opportunities to reflect on their relationship with the second child, possibly resulting in increases in relationship quality. If teachers indeed do have to get used to reflecting about the relationship with a child, it suggests that the inclusion of two children in LLInC is crucial.

An additional reason to include two children in LLInC was that teachers can compare the relationship profile of the two selected children, which happens at the end of the fourth session. By comparing relationships of two different children, a teacher may realize that relationships with individual children are also based on a more general expectation of what he or she believes to be important as a teacher. In this way, domain-specific mental representations, instead of only a relationship-specific mental representation (Spilt et al., 2011), may also be activated. Teachers may realize that relationship quality also depends on characteristics of the teacher, such as beliefs about themselves as a teacher (Pianta et al., 2003). This raises the question if the results of LLInC, especially regarding teachers' global judgments of relationship quality, would also generalize to relationships with other children in the classroom who are not subjects of the intervention. This could be further studied in research using a within-class comparison group (c.f., Driscoll & Pianta, 2010). If LLInC also proves helpful for dyadic relationships that are not directly subject of the sessions, LLInC may not only stimulate child-specific mental representations, but also more domain-specific mental representations. Based on current findings, it is recommended to carry out LLInC at least for two children in the classroom, and to use a within-class comparison group to investigate transfer effects of LLInC on other teacher-child dyads in the classroom.

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Almost all teachers had increases in their global judgments of relationship quality, whereas only four out of eight had increases in their day-to-day relationship experiences. This indicates that global judgments of relationship quality differ from teachers' day-to-day experiences in relationships with individual children. Kahneman and colleagues showed a similar difference between retrospective assessments of affective experiences compared to evaluations from immediate experiences (Kahneman, Frederickson, Schreiber, & Redelmeier, 1993). Based on these and other findings, Kahneman (2011) argued that retrospective assessments may play a more important role in future decision making. This research implies that teachers may direct their future behavior toward individual children based on the retrospective assessment of their relationship rather than on day-to-day experiences. Regarding the present study, it is conceivable that changes in the retrospective assessment of relationship experiences precede changes in day-to-day interactions and experiences, and that, over time, changes in global judgments of relationships may eventually lead to changes in day-to-day interactions.

Several limitations of the current study should be noted. First, this study used a convenience sample of four teachers and eight children, which obviously impedes the generalization of the results. It must be noted, however, that the participating children were selected from regular classrooms and they did not have special characteristics that challenge generalization of the results. Also, we only based the intervention effects on teachers' judgments and did not conduct observational measurements in the classroom. As a second limitation, we should acknowledge that our questionnaire to assess teachers' perceptions of relationship quality at pretest and posttest was rather short. It could have been more valid to use an original version of a psychometrically sound questionnaire. For the present study teachers were asked to complete multiple questionnaires. Because of the high workload of teachers, we decided to construct a shorter questionnaire to limit the completion time as much as possible. Still, our short questionnaire was based on items of larger well validated questionnaires such as the Student-Teacher Relationship Scale (STRS; Koomen et al., 2012). Third, although for measurements of daily experiences we were able to include a control condition (e.g., baseline), the changes in global judgments of relationship quality could not be compared with teachers receiving no intervention. Consequently, we have no information about whether teachers who did not receive LLInC also would have changed their judgment of relationship quality. Therefore, adding a control group is necessary in future research. Fourth, we did not investigate how LLInC led to

changes in relationship quality. Although we assume that reflecting about the relationship may have altered teachers' mental representations, we did not investigate that explicitly. Future studies could include measurements of teachers' quality of reflection and measurements about changes in mental representations to identify intervention mechanisms.

Taken together, the findings of this case study suggest that the teacher-based coaching intervention (i.e., LLInC) positively influences teachers' global judgments of teacher-child relationship quality and that it partly improves daily teacher-child interactions. LLInC should consist of sessions about the relationship with at least two children, as most daily intervention effects were found for the second child. As LLInC consists of only four sessions between a teacher and a consultant, the intervention seems feasible to carry out in practice. In sum, influencing teacher-child relationships through reflecting on mental representations of relationships may be an effective tool for improving teacher-child relationships.