



Beginning and experienced secondary school teachers' self- and student schema in positive and problematic teacher–student relationships



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HIGHLIGHTS

- In teachers' accounts of positive and problematic relationships, student schemas differ more than self-schemas.
- Especially student agreeableness, motivation and interpersonal behaviour differ in positive and problematic relationships.
- Novices and experienced teachers mainly differ in their accounts of positive relationships.

ARTICLE INFO

Article history:

Received 29 July 2015

Received in revised form

13 November 2015

Accepted 22 December 2015

Available online xxx

Keywords:

Teacher–student relationships

Relational schemas

Teacher cognitions

Self-schema

Student schema

ABSTRACT

The quality of teacher–student relationships is important for teachers' well-being in schools. In this interview study we investigated which cognitions comprise secondary school teachers' self- and student schema in positive and problematic teacher–student relationships. Frequency analyses of these cognitions showed that especially student schema differed in teachers' talk of positive and problematic relationships. When combining cognitions of the self- and student schema, a HOMALS analysis revealed two types of positive and two types of problematic relationships. Differences between novices and experienced teachers were apparent for positive relationships. These findings raise questions about teachers' attributions for the quality of teacher–student relationships.

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1. Introduction

The quality of teacher–student relationships is important for both students' and teachers' wellbeing in schools. Some researchers even claim that the heart of classroom teaching and learning lies in the relationships between teachers and individual students (Lyons, 1990). For students, positive teacher–student relationships correlate, among other things, with students' motivation, grades, and school success (e.g., Hamre & Pianta, 2001; Wentzel, 1998). For teachers, these relationships correlate with job satisfaction

(Veldman, van Tartwijk, Brekelmans & Wubbels, 2013), teacher wellbeing (Gu & Day, 2007), and low levels of stress (Yoon, 2002). In the literature, high quality relationships have been described as warm and open; in these relationships the teacher creates a structured environment with clear expectations whilst simultaneously conveying a message of empathy and mutual respect (e.g., Wubbels et al., 2014). Low quality relationships on the other hand, are characterised by high conflict and discordance between teacher and student and described by teachers as disrespectful, conflictual, or distant (e.g., Spilt, Koomen, & Thijs, 2011). Because of the impact these relationships can have on student and teacher outcomes, it is important to understand their fundamentals. In the present study we aim to enhance our understanding of teacher–student relationships by investigating teachers' perceptions of teacher–student relationships.

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Interpersonal relationships are formed and influenced not only by the actual behaviours and qualities of both actors involved, but also by the individual's mental representation, or working models of the relationship (Pianta, Hamre, & Stuhlman, 2003). In the context of education, the influence of this idiosyncratic mental representation has also been recognised: “teacher–student relationships can be understood as the generalized interpersonal meaning students and teachers attach to their interactions with each other” (Wubbels et al., 2014, p. 364). Behaviour and mental models operate in a reciprocal manner because these meanings are not only based on these interactions but also shape the interactions themselves.

Previous studies of teacher–student relationships demonstrate this connection between teachers' mental representations of the relationship and their behaviour. For instance, based on an interview study with teachers, Silberman (1969) divided teacher–student relationships into four categories according to the attitude of the teacher towards the student: (1) attachment, (2) concern, (3) indifference, and (4) rejection. Teachers' tended to respond warmly to the attachment group, were supportive and helpful towards the concern group, had very few interactions with the indifferent group, and developed conflictual responses towards the rejection group (Brophy & Good, 1970; Good & Brophy, 1972).

More recent studies also illustrate the importance of teachers' mental representations in the formation and maintenance of teacher–student relationships (e.g., Saft & Pianta, 2001; Stuhlman & Pianta, 2002). Based on teachers' perceptions, Pianta (2001) proposes a framework of relationship quality based on dimensions rather than on discrete types of relationships. In this model high quality relationships are defined by high levels of closeness, low levels of conflict, and low levels of dependency. Research on teachers' narratives and observed teacher–student interactions shows that negative affect in teachers' narratives correlated with the expression of negative affect in classroom interactions with particular children (Stuhlman & Pianta, 2002).

Although these studies show that teachers' mental representations of relationships correlate with subsequent teacher behaviour towards particular students, they tell us little about what constitutes these mental representations themselves, in other words: what cognitions are teachers' mental representations of teacher–student relationships built upon? Theory on people's mental representations or working models of relationships may provide clues as to the sorts of cognitions involved in relationship perception.

1.1. Relational schemas

Theories on interpersonal or relationship cognition conceptualise relationships in terms of mental representations of the self and significant others (e.g., Andersen & Cole, 1990). According to the relational schema theory (Baldwin, 1992) people develop mental maps of relationships with individuals, so called *relational schemas*, which guide their behaviours in subsequent interactions. A relational schema is an interconnected web of knowledge that people hold and may use when interacting with another person, or, as Baldwin states: “a cognitive structure representing patterns of interpersonal relatedness” (Baldwin, 1992, p. 33). Relational schema theory assumes that the relational schemas people hold guide their attention and behaviour according to information processing principles. Schemas are activated when in an interaction with a person, guiding attention towards specific aspects of these interactions and guiding subsequent behaviour. However, this is a reciprocal process since repeated associations when interacting with other people also form relational schemas themselves.

Mental representations of a relationship such as relational

schemas, influence subsequent behaviour in interaction with a specific other through cognitions called scripts. Scripts can be defined as a set of expected action patterns associated with relationship partners. By their nature, interpersonal scripts specify procedures as well as semantic knowledge defining the situation and the elements within it (Baldwin, 1992). Two elements of importance in the formation of scripts are representations of self and other.

Self and other schema can be regarded as generalisations or theories about self and other in a particular relational context that are used to guide the processing of social information. In research on self-perception in relationships, Ogilvie and Ashmore (1991) suggest a self-with-other unit, defined as “a mental representation that includes the set of personal qualities (traits, feelings, and the like) that an individual believes characterizes his or her self when with a particular other person” (p. 290). Self-with-other is also known as the relational self (Chen, Boucher, & Tapias, 2006). In line with theory on the self-schema, the other-schema can be thought of as an associative network of declarative knowledge consisting of expectations about attributes or traits, thoughts, goals, behavioural tendencies, specific facts, and feelings (e.g., Baldwin, 1992; Chen et al., 2006).

1.2. Teachers' perceptions of students and of self

Previous studies of teachers' perceptions of students and of themselves can provide expectations about the content of teachers' self-schemas and other schemas. A qualitative study by Connell (1985) of Australian secondary teachers' perceptions of students yielded four categories of teachers' comments about students: (1) pupil success in formal learning situations, (2) pupil enthusiasm, energy, or motivation, (3) pupil's disruptive or compliant classroom behaviour, and (4) unique personality attributes. A later American study on primary and secondary teachers, by Kagan and Tippins (1991), extended this list with the categories: physical appearance, motor skills, social interactions with peers, family life and favourite activities. Mayer and Marland (1997) interviewed five highly effective teachers about the knowledge they had of their students and ways in which they used this knowledge in their classroom teaching. They also found knowledge of students to cluster in the areas of: abilities, work habits or attitudes, personality and family background.

Quantitative studies have identified student characteristics from these categories as either enhancing or undermining positive teacher–student relationships. Teachers mainly form positive relationships with students who perform at a high level as compared to peers (Willis & Brophy, 1974), who show effortful control (Rudasill & Rimm-Kaufman, 2009), who they view as conforming to classroom rules, who show dependent and acquiescent behaviour (Brophy & Good, 1974; Feshbach, 1969; Willis & Brophy, 1974), and who are less shy than their classmates (Rudasill & Rimm-Kaufman, 2009). Wentzel (2000) found similar results to the above studies, claiming that teachers' descriptions of students reflect three types of desired outcomes: performance outcomes (e.g., achieving good grades), motivational qualities (e.g., being persistent), and social outcomes (e.g., being responsive to rules). These social outcomes also involve sharing and being helpful to others. Research has shown that this type of behaviour, especially when expressed towards the teacher, is also indicative of teachers' perception of the teacher–student relationship. For instance, Willis and Brophy (1974) have found that both the perceived degree to which students reward teachers in their personal contact with them, as well as perceived students' openness to contact with the teacher, are predictive of positive teacher–student relationships.

Teacher beliefs about themselves have also been found to

influence their interpretation of student (conflict) behaviour. Teachers who reported lower levels of self-efficacy tended to report more conflict with students in their classroom (Hamre, Pianta, Downer, & Mashburn, 2008). In contrast, teachers who have a positive sense of self and a concern for others had a more positive sense of their students. Edwards and Kern (1995) hypothesise that they may perceive their students as being less impatient and aggressive and as being more willing to respond to instructions and attend to work given by the teacher.

1.3. The study

In this study we wanted to investigate which cognitions were of importance in teachers' self- and other schema within teacher–student relationships. In order to investigate this we dismissed the possibility of prompting for certain characteristics using a questionnaire and chose instead to conduct semi-structured interviews. Using this method, teachers themselves could introduce categories. Given that the salience of certain characteristics in descriptions of self and other depends, among other things, on the utility that the feature has for the perceiver within a certain context (Moskowitz, 2005), we assumed the categories mentioned by teachers to be of high utility to them when interacting with students in these relationships. Thus, although hair colour of the student may be part of a teacher's relational schema, this is not a feature that may come to the teacher's mind when thinking of this student because it is of little value in the sense-making process that occurs during interactions. Previous research on teacher–student relationships has largely failed to address the issue of utility as perceived by the teacher (mainly using questionnaires) and there are calls for more in-depth studies of teachers' perceptions of interactions with students (Spilt et al., 2011).

Also, although previous research provides an impression of which teacher cognitions are present in teachers' mental representations of teacher–student relationships, a study combining both self-schema and image of student is lacking. Of these, teachers' self-descriptions within a particular relationship remain especially under researched. When including teacher characteristics, studies of teacher–student relationships typically focus on categorical variables such as gender, years of experience and years of schooling or teacher beliefs about themselves in general, rather than on self-belief or on the goals they hold in a particular relationship.

In this study, in order to respect the idiosyncratic and particular nature of (perceptions of) relationships, we focused on the other schema (or student schema) as well as the self-schema within teachers' mental representations of certain teacher–student relationships. Since we hoped to uncover what cognitions define perceived quality of teacher–student relationships, we chose to focus on teachers' self-schema and student schema in both positive and problematic teacher–student relationships. Differences between teachers' mental schemas of these two types of relationships may inform us about what factors define the quality of teacher–student relationships. Our main research questions were: (1) what cognitions comprise teachers' self-schema and student schema in positive and problematic relationships, and (2) when we investigate teachers' self and student schema simultaneously can we find different types of relationships and if so, what variables characterise these types?

2. Method

In order to investigate teachers' relational schemas of positive and problematic relationships, we conducted an interview study with 16 secondary school teachers for two consecutive years.

2.1. Participants

For this study we interviewed 16 secondary school teachers in the Netherlands in the spring of 2012 and 2013. These teachers were part of a group of 180 teachers voluntarily participating in a larger study. The goal of the selection process was maximum variation (Flyvbjerg, 2004) and the selection criteria were years of experience and teacher–class relationship. To measure the teacher–class relationship we used a Questionnaire on Teacher Interpersonal behaviour (QTI) (Wubbels, Brekelmans, den Brok, & van Tartwijk, 2006). The QTI is grounded in interpersonal theory and measures the teacher–class relationship based upon students' perceptions of the teacher in terms of *agency* and *communion*. Interpersonal theory claims that all human behaviour and perceptions thereof can be described along two dimensions: agency and communion (Horowitz & Strack, 2010). The agency dimension describes the degree to which one controls the interaction or excludes power, the communion dimension describes the level of affiliation or friendliness one shows towards the other person (Gurtman, 2009). The QTI applied for this study consisted of 24 Likert-type items that were answered on a 5-point response scale. The responses were averaged across the students in a class and processed into scores on the two interpersonal dimensions: agency and communion. Examples of items were: “this teacher is strict” and “this teacher is patient”.

We asked teachers to distribute the QTI among the students in their most difficult class. Earlier research had shown that data gathered on teacher–class relationships from classes that were particularly difficult, differentiated well between teachers (de Jong, van Tartwijk, Verloop, Veldman, & Wubbels, 2012). Of the 180 teachers, 135 returned our questionnaire. Of this group, 37 teachers were novices (under 3 years of experience) and 53 were more experienced teachers (over 8 years of experience). From these groups we selected eight beginners and eight experienced teachers, keeping maximum variation of teacher–class relationships in mind (see Table 1). Two teachers were unable to participate in the second year of this study thus data on 30 positive and 30 problematic relationships were collected.

2.2. Instrument

To gather data on teachers' relational schemas we used a semi-structured interview. In the interview we asked teachers to elaborate on a (current) positive relationship and a problematic one. During the interview we tried not to prompt for possible variables within the relational schema. We, therefore, always started with a general question (e.g., How would you describe this student?) and asked teachers to elaborate on their answers. Later in the interview we prompted for categories of the relational schema (e.g., Can you describe this student as a person?) yet not for variables within these categories (e.g., How would you describe this student in terms of extraversion?). Relational schema categories that were prompted for were general descriptions (e.g., How would you describe yourself as a teacher for this student?), behaviour in and out of class (e.g., How does this student generally behave during class?), and feelings or thoughts about one another (e.g., What do you think this student thinks of you?). The interview covered both self schema and student schema.

Teachers were encouraged to choose these relationships according to their own standards of positive and problematic and were encouraged to elaborate on their answers. In addition we asked teachers about general strategies for creating positive relationships and preventing or mending problematic ones (data not discussed in this paper). Overall the interviews lasted between one

Table 1
General characteristics of the respondents.

Alias	Gender	Age	Subject taught	Years of experience	Teacher–class relationship	
					Agency	Communion
Novices						
Ned	M	29	Social Studies	2	.44	.31
Nate	M	24	Chemistry	2	.30	.43
Neil	M	28	Biology	2	.15	.53
Nicolas	M	34	Physics	1	.10	.10
Nathan	M	25	Physics	1	.03	–.22
Nicole	F	39	Physics	1	–.17	.28
Nick	M	43	Physics	1	–.22	.50
Norah	F	29	Chemistry	1	–.29	–.18
Experienced						
Lucy	F	56	Art	34	.41	–.16
Mary	F	47	French	9	.35	–.01
Loraine	F	42	Physics	21	.33	.48
Mildred	F	50	Dutch	11	.33	.38
Mark	M	46	Economics	8	–.05	.00
Lawrence	M	54	Geography	26	–.07	.26
Luke	M	50	Physics	25	–.17	–.29
Michael	M	47	Chemistry	11	–.22	.46

Note. Teacher–class relationship is based on student scores on QTI in most difficult classroom. Level of agency and communion could vary between –1.0 and 1.0.

and one and a half hours.

2.3. Coding scheme

All interviews were transcribed and analysed using the software tool Atlas ti. First, we assigned fragments to either student schema (concerning the student) or self-schema (concerning self). Based on categories mentioned in relational schema theory for these two schemas, we divided fragments into six categories. The first category, personality traits, includes codes concerning the big five personality traits (e.g., extraversion). The second category, scholastic attributes, contains codes about teacher and student characteristics that relate to their role as teachers (self-efficacy) or as students (e.g., performance outcomes, motivation et cetera). The third category, thoughts and motives, contains codes that describe thoughts or interests of teachers (e.g. on student learning) and students (e.g., interest in subject). The fourth category, behaviour, includes codes on teacher and student interpersonal behaviour (e.g., supporting or objecting). The sixth category, specific facts, contains codes on teacher and student facts (e.g., years of experience or grade level). Finally, the category feelings contains codes about feelings of the teacher towards this student or feelings of the student towards this teacher. We coded these feelings either as positive (e.g., enthusiasm), neutral (e.g., worry), or negative (e.g., irritation). Table 2 shows an overview of all categories and codes.

We used findings from earlier research on teacher self and student schema as sensitising constructs for generating the variables for the categories personality traits (De Raad & Schouwenburg, 1996), student scholastic attributes (Wentzel, 2000), teacher scholastic attributes (Tschannen-Moran & Hoy, 2001), and interpersonal behaviour for both teachers and students (Wubbels et al., 2006). Variables for the categories “specific facts”, “thoughts and motives”, and “feelings” emerged through a more grounded approach. After a few rounds of coding and recoding the final coding scheme proved applicable to almost all fragments in the interviews (saturation occurred), and sufficient numbers of regularities emerged (Lincoln & Guba, 1985) thus allowing us to extensively analyse the content of teachers' relational schemas. This final coding scheme contained three levels: categories (e.g., personality traits), variables (e.g., extraversion), and codes (e.g., introverted).

A recoding of six interviews (10% of the data) by a second coder

revealed an agreement of $K = .74$. In order to assure agreement on all coding, a second coder reviewed the coding of all the interviews. All differences were discussed until mutual agreement was reached.

2.4. Analyses

The coding process resulted in a table showing which codes were mentioned for each relationship. Since we were not interested in, for instance, *how many times* a teacher named a specific student as extraverted but in *if* a teacher named a specific student as extraverted, we coded 1 when a code was mentioned (1 or more times) and 0 when a code was not mentioned. With this binary table of results we searched for salient cognitions as well as for different types of relationships.

In order to study salient cognitions in teachers' self and student schema we conducted a descriptive frequency analysis and compared positive with problematic relationships (see Table 2).

In order to search for types of relationships through the combination of self- and student schema, we conducted a correspondence analysis. This is an exploratory analytical technique that represents the distances or similarities between the codes and the objects (in this case the relationships) in a multidimensional space. In our case this meant the analysis yielded a coordinate system in which both the relationships as well as the codes were depicted. Through observing the relationships and codes in this graph we strived to: (1) discover which relationships clustered together so we could investigate if positive relationship indeed differed from problematic ones, (2) discover whether relationships of novices differed from those of experienced teachers, and (3) discover which codes accompanied these clusters of relationships, or types, in order to describe what they looked like.

We used the HOMALS programme in SPSS (SPSS, 2013; Van de Geer, 1993) to plot the codes as well as relationships on two dimensions. We decided on a two dimensional solution because it could be meaningfully interpreted in respect of our data. The HOMALS analysis yielded a plot with four quadrants representing four types of relationship. The output showed that the codes “low openness” in the student schema and “conscientiousness” in the self-schema were outliers with a high discriminatory value, thus seriously influencing the outcome of the plot. Since both codes were only mentioned in one relationship, we considered these

Table 2
Frequency analysis of prevalent cognitions in teachers' relational schemas.

Student schema	Type of relationship				Self-schema	Type of relationship			
	Positive		Problematic			Positive		Problematic	
	+	–	+	–		+	–	+	–
Personality traits					Personality traits				
Extraversion	13	6	5	3	Extraversion	2	2	1	1
Agreeableness	26	4	4	11	Agreeableness	6		1	
Conscientiousness	6		1	2	Conscientiousness	1			
Emotional stability	6	10	4	4	Emotional stability	2		1	
Openness	4	1			Openness	1			
Scholastic attributes					Scholastic attributes				
Performance outcomes	13	6	8	14	Self-efficacy				
Motivational qualities	15	4	1	15	Instructional strategies	4	2	2	1
Relationship teachers	5	7	3	13	Student engagement	1	1	1	5
Relationship peers	9	6	7	13	Class management	3	4	7	11
Influence on peers	7	3		10	Individual relationships	20	7	12	7
Aptitude	17	6	10	5	This relationship	13	6	8	23
Thoughts, motives					Thoughts, motives				
Interest in subject	16	1	1	11	Responsibility for				
Focus on grades	2		2	2	Student learning	11		9	6
Focus on peers in class	5	3	7	2	Student engagement	10	2	9	5
Interest in teacher	16	2	7	12	Individual relationships	18	12	17	12
					Strategies about				
					Class management (agency)	10		14	
					Class management (communion)	8		8	
Behaviour					Behaviour				
	In	Out	In	Out		In	Out	In	Out
Initiating	10	4	2	2	Directing	25	15	19	14
Supporting	24	28	11	12	Supporting	20	29	21	23
Collaborating	28	17	11	7	Understanding	16	15	6	7
Conforming	14	5	11	9	Acquiescing	6	2	7	3
Withdrawing	4	1	20	8	Hesitating	2	1	7	1
Objecting	10	3	28	18	Objecting			7	3
Confronting	12	3	27	9	Confronting	10	5	28	11
Demanding	6	1	3	4	Imposing	15	7	24	11
Specific facts					Specific facts				
Grade level	19		21		Other activities	7		3	
Home life	11		10		Teacher experience	3		3	
Challenges	6		12						
Appearance	5		10						
Friends	4		7						
Feelings					Feelings				
	+	–	+	–		+	–	+	–
Feelings about teacher	16	1	4	13	Feelings about student	26	1	11	25

influences disproportional and decided to exclude them from further analyses.

After discussing the types of relationships according to the codes located in the corresponding quadrants, we described the four types with interview excerpts. For this, we re-read four relationships per quadrant in search of quotes that showed the relationship between the self-schema and the other schema. We chose these relationships based on their location in the two-dimensional space as they were located at the centre of each quadrant.

3. Results

3.1. Content of teachers' self- and other schema

A frequency analysis of the coded interviews showed which categories were prevalent in teacher talk of positive and problematic relationships with students (see Table 2).

3.1.1. The student schema

Almost all teachers' student schemas contained personality traits of students. Personality traits that were mostly mentioned

concerned level of extraversion (extravert-introvert), agreeableness (friendly-unfriendly), and emotional stability (sure-unsure). As was to be expected, especially for level of agreeableness of the student, these were very different in positive and problematic relationships: students were called friendly in positive relationships and unfriendly in problematic ones. Traits concerning level of conscientiousness and openness to new experiences were rarer in teachers' accounts of their students. As Table 2 shows, when describing students with whom they had a positive relationship, teachers mentioned traits much more often than when describing students with whom they had a problematic relationship.

Scholastic attributes were also present in teachers' relational schemas of their students. Both performance outcomes (high or low grades) and motivational qualities (more or less motivated during class) were mentioned in the accounts of most relationships. Social characteristics were also mentioned frequently and we found that teachers differentiated between how popular a student was among teachers (relationship teachers) and among peers (relationship peers). However, they also mentioned the influence the student had on other students and whether this was good or bad: "So he helps fellow students around him. One student sitting next to him also receives high grades, this is because they sit next to one

another” (Nate, positive relationship). Finally, intelligence or aptitude was also mentioned in the majority of the relationships.

When comparing these variables for positive and problematic relationships, a student’s motivational qualities proved especially noteworthy. In positive relationships students had high grades, were motivated, had a positive influence on peers, and had high aptitude. Their social characteristics, however, were not always positive; popularity amongst peers and other teachers was not always high. In problematic relationships teachers mentioned students being unmotivated, having a bad relationship with teachers in general, and having a bad influence on peers. They did not, however, always have bad grades nor did they have low aptitude.

When it comes to students’ thoughts, teachers mentioned students’ goals or lack thereof. Level of interest in the subject and in the teacher him or herself were especially mentioned as student characteristics. In positive relationships students scored highly on both, in problematic relationships they were mentioned as not being interested in the subject or the teacher: “They always make it clear to me that nothing I say has to be done, that it’s not useful or that they don’t pay any attention to me” (Nathan, problematic relationship). (Dis)interest in chatting with peers during the lesson or in grades were also mentioned but less often.

Comparing in-class behaviour with out of class behaviour, teachers mentioned out of class behaviour in almost all relationships (56 out of 60 relationships). However, there were some relationships in which the in-class behaviour of the student was not mentioned at all (12 relationships). In their reports of interactions with their students, all student interpersonal behaviour was mentioned, however, little student behaviour with high agency was present (student initiating and demanding behaviour). Teacher narratives showed that in positive relationships students displayed behaviour high on communion (collaborating, conforming), whereas in problematic relationships students displayed behaviour low on communion (objecting, confronting).

In terms of the specific features of students, teachers noted grade level and made references to the home life of students. Student disabilities or challenges, appearances and remarks on friends were less abundant but also mentioned.

Finally, teachers also remarked on how students felt about them as a teacher. Positive feelings (e.g., trust, safety, interest and appreciation) prevailed over negative ones (e.g., distrust, disrespect, unsatisfied and disappointed) in their reports of teacher–student relationships. There were even four problematic relationships in which the teacher thought the student had positive feelings towards him or her: “So there is also some kind of trust, I am allowed to help” (Nicole, problematic relationship).

3.1.2. *The self-schema*

In their narratives of positive and problematic relationships, teachers rarely described themselves in terms of personality traits (15 relationships). They did, however, describe themselves in terms of scholastic attributes. In these cases we coded for expressions of self-efficacy. As Table 2 shows, self-efficacy in the area of individual relationships was common in teachers’ talk of relationships with students. Belief in one’s abilities was mentioned more often than doubts or disabilities in this area in both positive as well as problematic relationships. Also, when it comes to the ability to build relationships with the students in question, teachers expressed high self-efficacy in seven problematic relationships: “But if I look at her average of being expelled from class, then I am way below average. When you take that into consideration I don’t think I’m doing such a bad job” (Nate, problematic relationship). Self-efficacy in the area of classroom management was also expressed in many of the relationships discussed, especially the problematic ones. However, references to self-efficacy in the areas of instructional

strategies and student engagement were more rare.

Teachers’ thoughts and motives mostly took the form of behavioural strategies. They mentioned strategies that they applied during teaching or in interactions with students. These strategies conveyed a goal or feeling of responsibility that could be high: “But with every child I ask myself how can I motivate you or challenge you in order to progress?” (Lawrence, positive relationship), or low: “And after twenty-five times you think something like ‘well how about not helping you then, why don’t you just figure it out on your own’” (Nathan, problematic relationship). In teachers’ strategies this sense of accountability (or lack thereof) was expressed for student learning, student engagement, and individual relationships. Of these, strategies for building individual relationships were especially abundant with teachers mostly expressing feeling responsible for the quality of these relationships: “Of course you always try to make contact, you don’t just leave it as is [a bad relationship]” (Loraine, problematic relationship). Overall teachers mentioned strategies conveying a high sense of responsibility more often than strategies or remarks on student responsibility. However, teachers did mention student responsibility for learning and engagement in problematic relationships: “So I think, I don’t care [how much effort you put into it] as long as you get to work” (Nicolas, problematic relationship).

Remarks or strategies on classroom management were also a considerable category. These strategies conveyed a belief in either managing a classroom through agency — “In class you sometimes have to get angry and become strict and say, ‘If you don’t shut up now you’ll get detention-work or you can just leave’ or something like that” (Nathan, positive relationship) — or through communion — “And I always try to be very explicit in that sense and tell them ‘I am on your side, it’s like a coach who makes you run laps on the field, not because I want to see you get tired but because I want you to win that match. So I’m not giving you that assignment to irritate you, but because I want you to get a high grade’. And that’s really true, I really want that” (Ned, problematic relationship).

When teachers talked about their own behaviour in positive and problematic relationships, behaviour inside the classroom was mentioned in almost all relationships (59 relationships), behaviour outside the classroom was mentioned in all but 5 relationships (55 relationships). Of these behaviours, those low on agency were rarely mentioned, that is, acquiescing, hesitating, and objecting behaviours. When comparing narratives of positive, with those of problematic relationships, we found that in positive relationships teachers mostly mentioned behaviour high on agency and high on communion (directing and supporting); in problematic relationships, however, behaviour was high on agency but low on communion (confronting and imposing). Nevertheless, here too, the most prevalent behaviour was supporting behaviour.

Specific facts about themselves were not abundant in teachers’ description of self. Other activities with which they were engaged in the context of school were mentioned (e.g., I am also a student mentor) as well as teacher experience (e.g., this is my first year teaching fourth grade), but not often.

Finally, teachers also mentioned positive or negative feelings toward the student in question. Positive feelings included understanding, enthusiasm, love, and being at ease; negative feelings included irritation, anger, lack of trust, and feelings of exhaustion. In addition, this category received a code for non-existent and indistinct feelings because a lot of teachers expressed their feelings in terms of what they did not feel towards this student (e.g., I’m not concerned), or expressed feelings that were not necessarily positive of negative (e.g., worry, pity, tolerance). Although teachers generally mentioned positive feelings when in positive relationships and negative feelings when in problematic ones, there were eleven problematic relationships in which the teacher mentioned positive

feelings toward the student: “For him I do have some sort of admiration, acceptance you know, he has managed to remain present like he was but also let me in” (Mary, problematic relationship).

3.2. Combining self and student schema

After analysing the cognitions present in teachers' student schema and self-schema of positive and problematic teacher–student relationships, we combined these two schemata in order to find different types of relationships. In order to do so, we conducted a HOMALS analysis. This analysis produced a two-dimensional plot in which both codes and relationships were portrayed. The plot depicting the relationships showed a clustering of positive relationships on the left side of the plot and a clustering of problematic ones on the right side (see Fig. 1). Furthermore, the plot showed that novices' narratives of positive relationships cluster together in the upper left side and that narratives of positive relationships by experienced teachers cluster together in the lower left side.

In the HOMALS analyses the codes were depicted in the same two-dimensional space. Since the plot with relationships showed differences on both dimensions, we decided on a solution with four types of relationships and analysed the codes per quadrant. For reasons of clarity we present these codes not in the plot itself but in a table in which each column represents one of the four quadrants in the plot (see Table 3).

3.2.1. Positive relationships

As Fig. 1 shows, positive relationships are mostly situated on the left side of the two-dimensional plot and problematic ones on the right side. When observing the positive relationships on the left side of the plot, one finds that novices cluster at the upper part and experienced teachers at the lower part of the plot. Thus, it seems that in the case of positive relationships, relational schemas of novices (relationship type I) differ from those of experienced

teachers (relationship type II). In order to describe these differences we analysed which codes were present in these quadrants (Table 3).

3.2.1.1. Relationship type I. In the upper left quadrant of the plot we find novice teachers' views of positive relationships. Codes of the student schema, as well of the self-schema, were present in this part of the plot. In novice teachers' talk of the student in positive relationships, the dimension “extraversion” was mentioned a lot. Scholastic attributes that clustered in this part of the plot were, among other things, high interest in the subject, high grades and high aptitude. Furthermore, the description of the students included interest in the teacher and out of class collaborative behaviour (e.g., hanging around in the classroom before or after class, engaging in informal talk with the teacher). Although in these relationships students could also be interested in chatting with peers during the lesson, they showed collaborative and supporting behaviour in class as well. In their accounts of positive relationships, novices would refer to this cluster of codes as a definition of model-students: “She is friendly, nice. Asks how I'm doing and if I had a good weekend and those kinds of things. When I tell her to do something she does it. Yes, kind of an ideal picture” (Nathan, positive relationship).

When observing codes of the self-schema that cluster in this part of the plot, it became clear that most teacher traits (even though they were not mentioned in many relationships) belong to this cluster. Thus, compared to the other types of relationships, it was in the novices' accounts of positive relationships that most teacher traits were mentioned. Scholastic variables pertaining to the self-schema that cluster in the upper left part of the plot mostly concerned thoughts on the creation of relationships with individual students. This theme was recurrent in teachers' sense of self-efficacy (with novices expressing doubts as well as abilities) and in teachers' goals.

Outside the classroom I will joke around more frequently ... [Because] when they pay attention to me or start a conversation with me, they must have a goal I think. Or they enjoy it or she thinks “well I have a certain connection with him” and I think it is good to support that so I try to attend to that relationship. (Nathan, positive relationship)

Furthermore, novices mentioned doubts on instructional capabilities in these relationships and they mentioned strategies that have student engagement as a goal. In comparison to the other three types, they also made more frequent mention of directing and supporting behaviour during class. However, in-class behaviour that was low on agency was also present in these accounts (acquiescing).

In order to describe this cluster of codes as a whole, we analysed four relationships located at the centre of the upper left quadrant of the plot. When observing the student schema and the self-schema simultaneously in these interviews, novices' reports of positive relationships showed a match between a teacher preoccupied with the creation of relationships with individual students and a student with whom this relationship succeeded. The student's interest in the teacher could serve as a sign of this success. Furthermore, this student succeeded in this teacher's classroom, receiving good grades and showing motivation and respect for the teacher's authority, even though the teacher was not always sure of his or her instructional abilities. In short, novices' accounts of positive relationships showed a teacher who is preoccupied with his or her own abilities and a student who affirmed this teacher's abilities.

Yes, like I just said, very informal (my behaviour). I tell her exactly what I think. When the class is very busy I just tell them

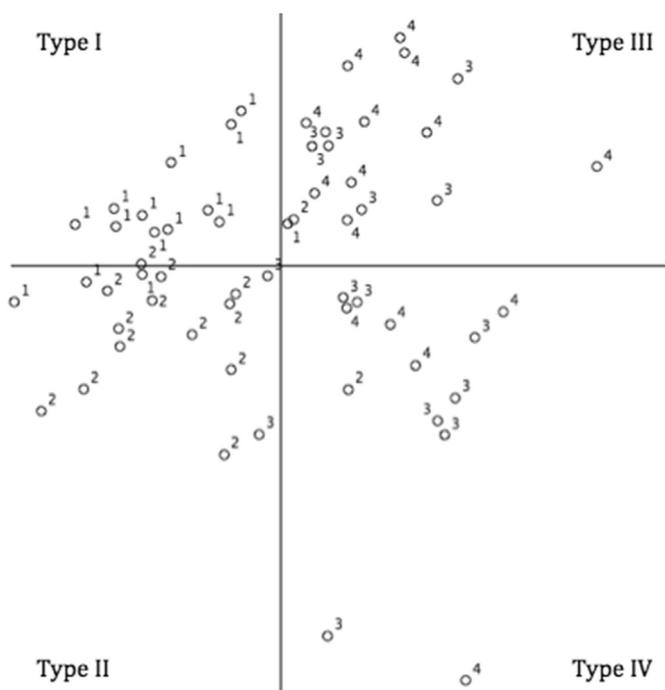


Fig. 1. Relationships portrayed in the two-dimensional space. 1 = novice teacher positive relationship, 2 = experienced teacher positive relationship, 3 = novice teacher problematic relationship, and 4 = experienced teacher problematic relationship.

Table 3
Codes pertaining to the four types of relationships.

	Positive relationships		Problematic relationships	
	Type I	Type II	Type III	Type IV
	Upper left quadrant	Lower left quadrant	Upper right quadrant	Lower right quadrant
Student schema				
Traits	Extravert, open, introvert	Friendly, insecure, secure, conscientious	Not conscientious	Unfriendly
Scholastic attributes and motives	Medium motivation, focus on subject, focus on chatting	High motivation, not focused on chatting	Low motivation, not focused on subject, not focused on grades	Focus on grades
	High performance, high aptitude High interest in teacher	Low aptitude Loved by teachers	Low or mediocre performance Not loved by teachers	Loved by some teachers, no interest in teacher Unpopular with peers
	Neutral outcome peers	Popular with peers, good influence peers	Small group of friends, bad influence on peers	
Behaviour in class	Supporting, collaborating	Initiating, conforming, demanding	Withdrawing, objecting,	Confronting
Behaviour out of class	Collaborating	Initiating, supporting	Demanding	Conforming, withdrawing, objecting, confronting
Specific facts			Grade level, appearance, friends	Home life, challenge
Feelings	Positive feelings		Negative feelings	
Self-schema				
Traits	Introvert, extravert, agreeable, open	Secure		
Self-efficacy	Low on instruction, low and high on individual relationships	High on instruction, high on individual relationship this student	Low and high on classroom management, low on student engagement, low on individual relationship this student	High on student engagement
Goals/strategies on	Student engagement, individual relationships		Classroom management	Student learning
Express lack of ownership of		Individual relationships	Student learning, student engagement	
Behaviour in class	Directing, supporting, acquiescing	Understanding	Hesitating, imposing	Confronting, objecting
Behaviour out of class	Acquiescing	Supporting, understanding	Hesitating, imposing	Directing, objecting, confronting
Specific facts	Teacher experience	Other activities		
Feelings		Positive feelings	Negative or neutral feelings	

that I'm through with it. It's okay to have fun but there are boundaries. And she reacts to that immediately. And when I need someone, for instance to get some paper for a test, would you? Well then she will already be standing, I don't even have to ask, that's the kind of student she is. I do make use of her. (Nate, positive relationship)

Thus, in novices' narratives of positive relationships, students made a difference for the teacher: "... [I call this a positive relationship] because she gives me the feeling that I'm a fun and good teacher, or at least, that I can be" (Nathan, positive relationship).

3.2.1.2. Relationship type II. Experienced teachers' narratives of positive relationships differed from the ones described above as the cluster of codes in the lower left side of the plot show. Whereas novices' student schema in positive relationships contained "level of extraversion" as a personality trait (extravert or introvert), the student schema of experienced teachers contained "level of emotional stability" (secure or insecure). Also, how others view students was more of a topic of talk in experienced teachers' narratives than in novices'. Students' high popularity among peers as well as among teachers were codes that clustered in this part of the plot. Student behaviour, clustered here, shows these students behaving high on agency (initiating and demanding) in class as well as out of class, but also behaving high on communion (supporting).

Building a relationship with individual students was not such a prevalent topic in the self-schemas of experienced teachers. On the contrary, stating that relationship quality mostly depended on the student was more prevalent: "... [The creation of this positive

relationship] depends on him [student], his personality and his curiosity and his work ethics, that whole package" (Mark, positive relationship).

In their accounts of positive relationships, experienced teachers mainly mentioned behaviour out of class that was high on communion (supporting and understanding).

When combining self-schema and student schema in this type of relationship an image emerged of a teacher who can cater for the needs of a specific student. For example, this may be a student who is very interested in a particular topic and who profits from the teacher as a subject matter expert, or a student who has some kind of personal problem with which the teacher can help. In experienced teachers' narratives of positive relationships, the teacher made a difference for the student: "[This is a positive relationship because] he profits from me. He takes advantage of the class, he leaves, he has had some instruction, he has asked it, and he leaves the class with a lot more than the others" (Mark, positive relationship).

Subsequently, when asked about why one has a positive relationship with this particular student, these narratives mostly involved thoughts and feelings about the student, not so much about the teacher: "I think she experiences that I am involved because of what I discuss with her during our coaching conversations. ... so I think she realises that I care for her" (Lucy, positive relationship).

3.2.2. Problematic relationships

Problematic relationships are situated on the right hand side of the plot. Contrary to findings for positive relationships, there seems to be little difference between novices and experienced teachers. We can, however, distinguish between two types of problematic

relationships. Within these types, frequency analyses of the codes showed differences between novices and experienced teachers.

3.2.2.1. Relationship type III. As Table 3 shows, codes that clustered in the upper right hand side of the plot showed students who were mostly problematic in class. These students were unmotivated, received low grades, were unpopular with other teachers and had a bad influence on peers during class. In accounts of these relationships, teachers mentioned students' in-class behaviour as low on communion (withdrawing and objecting). In response, codes of the self-schema included imposing teacher behaviour. In these relationships teachers expressed that they often had trouble directing this student and punished him or her regularly. Teachers could also express a sense of endlessness to this pattern: "Always testing me, always postponing the moment when you are being called upon for behaving the way you are supposed to and to get on with work" (Michael, problematic relationship).

Other codes of teachers' self-schema situated in this part of the plot involved classroom management. Teachers mentioned self-efficacy on this topic as well as strategies on how to achieve classroom management. At the same time they expressed that student learning and engagement was the student's responsibility:

And with her, I feel like, okay, if she has her way then she doesn't bother you. You know, you can constantly impose on her, but, one, will you enjoy that yourself? No. And, two, will it change her? Not really. Is there an advantage for the rest of the class? Also no. So in this case I've got a suggestion: some fights you don't win. (Nicolas, problematic relationship)

Frequency analyses of codes belonging to this type of relationship showed that the codes involving classroom management were especially prevalent in novices' accounts of relationships. They expressed low self-efficacy on classroom management more often (10 relationships) than experienced teachers (5 relationships) and strategies on classroom management were more prevalent in their accounts (19 relationships) than in those of experienced teachers (13 relationships). Students objecting in class, however, were more often present in experienced teachers' narratives (23 relationships versus 15).

The combination of the self- and student schema showed a student who makes a difference for the teacher in a bad way. This student disrupts the classroom process and the teacher has difficulty keeping the class on track: "Well it's less [detrimental] for her than for me. I have a group of students who are hard to motivate, who are harder for me to continue with than to her. She takes the lead at my expense" (Michael, problematic relationship).

3.2.2.2. Relationship type IV. Codes clustered in this final type of relationship presented students as unfriendly, with high motivation for grades, who were unpopular among other students. Even though they did not have a bad relationship with all teachers, they were generally not interested in the teacher. Teachers' accounts showed students who were very mistrusting of teachers, they were distant and accusing: "I am the one who does everything wrong but also tries to correct her, that is not okay [according to the student]" (Loraine, problematic relationship).

Teacher–student interactions in these relationships mostly took place out of class and student codes in this part of the plot show misbehaviour outside of class or before or after the lesson. As the fourth column in Table 3 shows, these students displayed conforming, withdrawing, objecting, and confronting behaviours in encounters with the teacher. In reaction to this, teachers also showed behaviour low on communion (objecting and confronting). Interactions took the form of discussions, for example, about

grades: "Yes he is very much into external attribution. I didn't give him enough points [for the assignment]" (Nicole, problematic relationship). Other codes pertaining to teachers' self-schema in this part of the plot involved expressions of high self-efficacy on student engagement and on goals on student learning.

Here too, frequency analysis of the codes mostly mentioned in this type of relationship showed differences between novices and experienced teachers. Experienced teachers mentioned students conforming out of class in many more relationships (11) than novices (3). They also mentioned more strategies that have student learning as a goal (in 15 relationships compared to 5 for novices).

If we combine codes in the student schema and the self-schema in this part of the plot a picture emerges not of a student who disrupts the classroom process (as in type III), but of a student who the teacher could not interest in the material and entice to work:

Because I cannot direct her to where I want her to go, because I cannot engage her the way I would like to, because her non-verbal expression tells me time and time again "I don't care, I will just do as I please". That's why I call this a bad relationship (Nathan, problematic relationship).

4. Discussion

In this study we investigated what cognitions underlie teachers' mental representations of different types of positive and problematic relationships with their students. Using relational schema theory as a base, we studied interview excerpts of 60 relationships and tried to define which cognitions comprised the student and self-schema of teachers when in positive or problematic relationships with their students.

Many earlier studies on teacher preferences for students involved quantitative studies using questionnaires that prompted certain student characteristics (e.g., Coplan, Hughes, Bosacki, & Rose-Krasnor, 2011). With this qualitative study we wanted to investigate what cognitions teachers' self- and student schema entail without provoking certain characteristics. We assumed that the categories mentioned would represent salient cognitions of high utility value to the teacher within these particular relationships.

Our results show that when comparing positive and problematic relationships, accounts of the student schema differ. As was to be expected, in positive relationships teachers viewed their students as agreeable and in problematic ones, as unagreeable. Perceptions of students' scholastic attributes also differed for positive and problematic relationships. Cognitions that were very different for these two types of relationships involved student social characteristics (especially influence on peers and interest in the teacher) and student motivational qualities (especially being motivated in general during the lesson and interest in the subject). Performance outcomes in the sense of grades and aptitude did not make a difference for teachers. They could have positive or problematic relationships with both high as well as low performers. This contradicts earlier findings that designate all three categories (social, motivational, and performance characteristics) as desirable outcomes (Wentzel, 2000). An explanation for this deviation from earlier findings can be formulated when one distinguishes between desirable student outcomes and preferred student characteristics that enhance the formation of positive relationships. Performance outcomes, such as getting good grades, may thus be a desirable student outcome but not an influential student characteristic when it comes to the quality of teacher–student relationships. Having an interest in the teacher, on the other hand, may be a student characteristic that enhances the formation of a positive relationship but

not necessarily a desirable student outcome. The distinction between desirable outcomes and preferred characteristics is of importance since it may shed some light on the direction of the relationship between student characteristics, quality of teacher–student relationships and student outcomes. Certain preferred student characteristics may promote the formation of supportive relationships. In turn, these relationships will entice children to adopt and internalise goals valued by others (Grusec & Goodnow, 1994).

On a similar note, the position of student behaviour still remains unclear. For instance, do teachers view problematic student behaviour as a cause of a problematic relationship or as a consequence of it? Our data shows that problematic student behaviour is not a deal breaker for positive teacher–student relationships (even in positive relationships the student can show problematic behaviour), or a defining factor of problematic relationships (in some problematic relationships the teachers talked of mostly compliant student behaviour). However, problematic student behaviour has been found to correlate with teachers' feelings of stress and burnout (Brouwers & Tomic, 2000; Evers, Tomic, & Brouwers, 2004) and teachers reported more negative attitudes towards students showing this type of behaviour (Byrne, 1994). We believe that the connection between teachers' perceptions of the teacher–student relationship, their perceptions of student problematic behaviour, and teachers' feelings of stress, deserves attention in future studies. It could be that perceived quality of the teacher–student relationship can mediate the effect of disruptive student behaviour on teacher wellbeing, as Spilt et al. (2011) propose.

Future research should also investigate the role of personality traits in teachers' mental representations of teacher–student relationships as they may indicate teachers' thoughts on the cause and the possibilities for change in the relationship quality. Our study showed that teachers' rarely talked about themselves in terms of traits. According to the actor–observer proposition, people attribute their own actions to situational tendencies and others' actions to stable personal dispositions (Jones & Nisbett, 1971). In an educational context this means that teachers view students' actions as the result of the enduring qualities of the student, whereas they view their own actions as heavily influenced by the environment or, in our case, the student in question. However, the premise of the actor–observer discrepancy has been seriously questioned (Malle, 2006) and in our study, the difference in self and other description may also be caused by the opening questions in the interview: “How would you describe this student?”, versus: “How would you describe yourself as a teacher of this student?”.

Teachers' thoughts and motives about student engagement and student instruction were rarely mentioned. Cognitions on classroom management and on building individual relationships, on the other hand, were abundant in teachers' accounts of teacher–student relationships. This may indicate that teachers' main goals of building relationships with individual students lie in the area of students' social characteristics. Previous research has suggested that it is, indeed, through nurturing and supportive relationships that teachers can play a critical role in motivating students' pursuit of positive social goals (Wentzel, 2003). Although studies show that teachers are aware of their role as socialisers, not all teachers possess the knowledge and competencies necessary for establishing these caring relationships with students. In a study on student teachers' knowledge of how to demonstrate caring to students, Weinstein (1998), showed that even though they referred to affective qualities of interpersonal interactions, specific strategies on how to achieve these qualities were lacking.

With the exception of interpersonal behaviour, there are no cognitions in the self-schema that are high for one type of

relationship and low for the other. In the division between positive and problematic relationships, the self-schema thus seems to play a less prominent role than the student schema. If, in teachers' perceptions, the student schema determines the relationship quality, this raises questions about teachers' attributions when it comes to the origins of relationship quality. Although some studies show that teachers view themselves and the school environment as the main causes of student problem behaviour (Poulou & Norwich, 2000), this may be less so for problematic teacher–student relationships.

The second research questions yielded a search for types of relationships and showed the importance of studying the self- and other schema simultaneously when investigating relationship quality (cf. Baldwin, 1992). As our study shows, it is the combination of a teacher and a student that defines the relationship, not merely the (perceived) “type” of student or teacher, and combining self- and student schema has exposed different types of relationships. The notion that a relationship is something that exists between people, not in the needs, motivations, or understandings of (one of) the participants, is not new (e.g., Fisher & Adams, 1994) and has even been discussed in an educational setting (e.g., Mercer & DeRosier, 2010).

For positive relationships we found differences between novices and more experienced teachers in the form of two different types of relationships. Novices engage in positive relationships with students with whom they succeed as teachers. These students thrive in their classroom, receiving high grades and showing motivation and respect for teachers' authority. More experienced teachers describe positive relationships from the viewpoint of the student, the student benefits from this teacher. Earlier findings acknowledge this difference stating that teachers make a transition from a self-centred approach to a more student centred approach of teaching (Fuller & Bown, 1975). This study shows how this difference in teachers' concerns is expressed in one-on-one teacher–student relationships.

The finding that the perception of positive relationships differs for novices and experienced teachers may be of importance when it comes to teacher wellbeing and attrition. Given that teachers have a basic need for relatedness (Spilt et al., 2011) and a need for positive and personal relationships with students (Hargreaves, 1998; O'Connor, 2008), positive teacher–student relationships may be a defining factor for teacher wellbeing. More research on the connection between teachers' positive emotions and teacher–student relationships at different stages of the teaching career is necessary to understand these differences. This research should take into account situational contexts in which teacher–student relationships are developed and discussed (Frelin & Grannäs, 2010). As our study shows, problematic relationships may differ according to the context of relationship negotiations or confrontations (during the lesson or outside of lesson time).

However, differences between novice teachers and experienced teachers found in this study may also relate to the subject matter taught by these teachers. Our group of novice teachers mainly consisted of science teachers whereas the group of experienced teachers was more varied. Researchers have suggested that different subject subcultures exist in schools and that teachers in these cultures may differ when it comes to their beliefs, norms and practices (Grossman & Stodolsky, 1995). In a study comparing science teachers to non-science teachers den Brok, Taconis, and Fisher (2010) found that science teachers were perceived by their students and by themselves as less dominant and less cooperative than other teachers. As a possible explanation for this difference they suggest different student stereotypes, differences in teachers' beliefs regarding their subject (science teachers may be more subject-oriented and less student-oriented) and differences in learning activities. Our finding that

novice teachers' (in this case science teachers') positive relationships involve mostly students who succeed in their classroom might be influenced by the suggested differences in beliefs of teachers teaching different subjects. Future studies including a larger sample of teachers of different subjects need to inform us on the influence of the subject matter on teachers' perceptions of teacher–student relationships.

Finally, in this study we analysed the data at a relationship level. Given the limited amount of data, we chose not to focus on intra-individual differences or on the development of the relationship perspective (by comparing the two measuring points). However, our understanding of the connection between teachers' enjoyment and motivation and teacher–student relationships may improve when including a more person-centred approach instead of a relationship-centred approach. Do we find recurrent themes when comparing a teacher's narrative of multiple positive and problematic relationships?

5. Limitations and practical implications

When observing the scientific and practical significance of the research presented here, the limited scope of this study should be taken into account. Although understanding teachers' perceptions of teacher–student relationships is of importance for our understanding of the formation and maintenance of these relationships, it is certainly not the only factor of importance. Students' perceptions of these relationships should be included in future research. Furthermore, teacher–student interactions are lacking in this study and should be given a prominent role in future research. This concerns perceptions of interactions or expected interactional patterns (so called scripts), as well as observations of real-time interactions between teachers and a student. The effect that self-schema and other schema have on behaviour towards one another may thus become clear, and methods for changing problematic relationships may emerge.

However, our findings do carry significance for certain practical implications. The finding that student motivation is such an important student characteristic in the creation of positive teacher–student relationships raises the question of whether teachers view student motivation as a student outcome to which they can contribute or whether they view this as a fixed student characteristic. Given how little teachers talked of student engagement in our interviews, it may be the latter. More attention in teacher education programmes on how to motivate students during the lesson may enhance teachers' awareness of their own role in student motivation and thus contribute significantly to the development of teacher–student relationships, especially in light of the supposition that during their lessons teachers mainly engage in positive relationships with students who are motivated.

Teacher–student relationships deserve attention in teacher education programmes and professional development programmes. Research has shown the positive effects of programmes focused on teacher–student relationships (e.g., Alvarez, 2007; Roorda, Koomen, Thijs, & Oort, 2013). Reflecting on their positive and problematic relationships (such as the ones described in this study) may increase teachers' awareness of their idiosyncratic presuppositions and biases in the emergence of teacher–student relationships and be a first step to developing teacher knowledge on this subject.

Acknowledgements

This research was made possible by funding from the Netherlands Organization for Scientific Research, NWO/PROO 411-

07-362.

References

- Alvarez, H. K. (2007). The impact of teacher preparation on responses to student aggression in the classroom. *Teaching and Teacher Education*, 23(7), 1113–1126.
- Andersen, S. M., & Cole, S. W. (1990). "Do I know you?": the role of significant others in general social perception. *Journal of Personality and Social Psychology*, 59(3), 384–399.
- Baldwin, M. W. (1992). Relational schemas and the processing of social information. *Psychological Bulletin*, 112(3), 461–484.
- Brophy, J. E., & Good, T. L. (1970). Teachers' communication of differential expectations for children's classroom performance: some behavioral data. *Journal of Educational Psychology*, 61(5), 365–374.
- Brophy, J. E., & Good, T. L. (1974). *Teacher–student relationships: Causes and consequences*. New York: Holt, Rinehart & Winston.
- Brouwers, A., & Tomic, W. (2000). A longitudinal study of teacher burnout and perceived self-efficacy in classroom management. *Teaching and Teacher Education*, 16(2), 239–253.
- Byrne, B. M. (1994). Burnout: testing for the validity, replication, and invariance of causal structure across elementary, intermediate, and secondary teachers. *American Educational Research Journal*, 31(3), 645–673.
- Chen, S., Boucher, H. C., & Tapias, M. P. (2006). The relational self revealed: integrative conceptualization and implications for interpersonal life. *Psychological Bulletin*, 132(2), 151–179.
- Cornell, R. W. (1985). *Teachers' work*. Sydney: Allen & Unwin.
- Coplan, R. J., Hughes, K., Bosacki, S., & Rose-Krasnor, L. (2011). Is silence golden? elementary school teachers' strategies and beliefs regarding hypothetical shy/quiet and exuberant/talkative children. *Journal of Educational Psychology*, 103(4), 939–951.
- de Jong, R. J., van Tartwijk, J., Verloop, N., Veldman, I., & Wubbels, T. (2012). Teachers' expectations of teacher–student interaction: complementary and distinctive expectancy patterns. *Teaching and Teacher Education*, 28(7), 948–956.
- den Brok, P. J., Taconis, R., & Fisher, D. (2010). How well do science teachers do? Differences in teacher–student interpersonal behavior between science teachers and teachers of other (school) subjects. *The Open Education Journal*, 3(1), 44–53.
- De Raad, B., & Schouwenburg, H. C. (1996). Personality in learning and education: a review. *European Journal of Personality*, 10(5), 303–336.
- Edwards, D., & Kern, R. (1995). The implications of teachers' social interaction on classroom behavior. *Individual Psychology: Journal of Adlerian Theory, Research & Practice*, 51, 67–73.
- Evers, W. J., Tomic, W., & Brouwers, A. (2004). Burnout among teachers: students' and teachers' perceptions compared. *School Psychology International*, 25(2), 131–148.
- Feshbach, N. D. (1969). Student teacher preferences for elementary school pupils varying in personality characteristics. *Journal of Educational Psychology*, 60(2), 126–132.
- Fisher, B. A., & Adams, K. L. (1994). *Interpersonal communication: Pragmatics of human relationships*. Boston: McGraw-Hill Humanities Social.
- Flyvbjerg, B. (2004). Five misunderstandings about case-study research. In C. Seale, G. Gobo, J. F. Gubrium, & D. Silverman (Eds.), *Qualitative research practice* (pp. 390–404). London: Sage.
- Frelin, A., & Grannäs, J. (2010). Negotiations left behind: in-between spaces of teacher–student negotiation and their significance for education. *Journal of Curriculum Studies*, 42(3), 353–369.
- Fuller, F. F., & Bown, O. H. (1975). *Becoming a teacher*. Chicago: National Society for the Study of Education.
- Good, T. L., & Brophy, J. E. (1972). Behavioral expression of teacher attitudes. *Journal of Educational Psychology*, 63(6), 617–624.
- Grossman, P. L., & Stodolsky, S. S. (1995). Content as context: the role of school subjects in secondary school teaching. *Educational Researcher*, 24(8), 5–23.
- Grusec, J. E., & Goodnow, J. J. (1994). Impact of parental discipline methods on the child's internalization of values: a reconceptualization of current points of view. *Developmental Psychology*, 30(1), 4–19.
- Gu, Q., & Day, C. (2007). Teachers' resilience: a necessary condition for effectiveness. *Teaching and Teacher Education*, 23(8), 1302–1316.
- Gurtman, M. B. (2009). Exploring personality with the interpersonal circumplex. *Social and Personality Psychology Compass*, 3(4), 601–619.
- Hamre, B. K., & Pianta, R. C. (2001). Early teacher–child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development*, 72(2), 625–638.
- Hamre, B. K., Pianta, R. C., Downer, J. T., & Mashburn, A. J. (2008). Teachers' perceptions of conflict with young students: looking beyond problem behaviors. *Social Development*, 17(1), 115–136.
- Hargreaves, A. (1998). The emotional practice of teaching. *Teaching and Teacher Education*, 14(8), 835–854.
- Horowitz, L. M., & Strack, S. (Eds.). (2010). *Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions*. Hoboken, NJ: John Wiley & Sons.
- Jones, E. E., & Nisbett, R. E. (1971). The actor and the observer: divergent perceptions of the causes of behavior. In E. E. Jones, D. E. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the causes of behavior* (pp.

- 79–94). Morristown, NJ: General Learning.
- Kagan, D. M., & Tippins, D. J. (1991). How student teachers describe their pupils. *Teaching and Teacher Education*, 7(5), 455–466.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- Lyons, N. (1990). Dilemmas of knowing: ethical and epistemological dimensions of teachers' work and development. *Harvard Educational Review*, 60(2), 159–181.
- Malle, B. F. (2006). The actor-observer asymmetry in attribution: a (surprising) meta-analysis. *Psychological Bulletin*, 132(6), 895–919.
- Mayer, D., & Marland, P. (1997). Teachers' knowledge of students: a significant domain of practical knowledge? *Asia-Pacific Journal of Teacher Education*, 25(1), 17–34.
- Mercer, S. H., & DeRosier, M. E. (2010). A prospective investigation of teacher preference and children's perceptions of the student-teacher relationship. *Psychology in the Schools*, 47(2), 184–192.
- Moskowitz, G. B. (2005). *Social cognition: Understanding self and others*. New York: Guilford Press.
- Ogilvie, D. M., & Ashmore, (1991). Self-with-other representation as a unit of analysis in self-concept research. In R. C. Curtis (Ed.), *The relational self: Theoretical convergences in psychoanalysis and social psychology* (pp. 282–315). New York: Guilford Press.
- O'Connor, K. E. (2008). "You choose to care": teachers, emotions and professional identity. *Teaching and Teacher Education*, 24(1), 117–126.
- Pianta, R. C. (2001). *Student-teacher relationship scale*. Odessa, FL: Psychological Assessment Resources.
- Pianta, R. C., Hamre, B., & Stuhlman, M. (2003). Relationships between teachers and children. In W. M. Reynolds, G. E. Miller, & I. B. Weiner (Eds.), *Handbook of psychology: Educational psychology* (Vol. 7, pp. 199–234). Hoboken, NJ: John Wiley & Sons.
- Poulou, M., & Norwich, B. (2000). Teachers' causal attributions, cognitive, emotional and behavioural responses to students with emotional and behavioural difficulties. *British Journal of Educational Psychology*, 70(4), 559–581.
- Roorda, D. L., Koomen, H. M., Thijs, J. T., & Oort, F. J. (2013). Changing interactions between teachers and socially inhibited kindergarten children: an interpersonal approach. *Journal of Applied Developmental Psychology*, 34(4), 173–184.
- Rudasill, K. M., & Rimm-Kaufman, S. E. (2009). Teacher-child relationship quality: the roles of child temperament and teacher-child interactions. *Early Childhood Research Quarterly*, 24(2), 107–120.
- Saft, E. W., & Pianta, R. C. (2001). Teachers' perceptions of their relationships with students: effects of child age, gender, and ethnicity of teachers and children. *School Psychology Quarterly*, 16(2), 125–141.
- Silberman, M. L. (1969). Behavioral expression of teachers' attitudes toward elementary school students. *Journal of Educational Psychology*, 60(5), 402–407.
- Spilt, J. L., Koomen, H. M., & Thijs, J. T. (2011). Teacher wellbeing: the importance of teacher-student relationships. *Educational Psychology Review*, 23(4), 457–477.
- Stuhlman, M. W., & Pianta, R. C. (2002). Teacher's narratives about their relationships with children: associations with behavior in classrooms. *School Psychology Review*, 31(2), 148–163.
- Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: capturing an elusive construct. *Teaching and Teacher Education*, 17(7), 783–805.
- Van de Geer, J. P. (1993). *Multivariate analysis of categorical data: Applications*. Newbury Park, CA: Sage Publications.
- Veldman, I., van Tartwijk, J., Brekelmans, M., & Wubbels, T. (2013). Job satisfaction and teacher-student relationships across the teaching career: four case studies. *Teaching and Teacher Education*, 32, 55–65.
- Weinstein, C. S. (1998). "I want to be nice, but I have to be mean": exploring prospective teachers' conceptions of caring and order. *Teaching and Teacher Education*, 14(2), 153–163.
- Wentzel, K. R. (1998). Social relationships and motivation in middle school: the role of parents, teachers, and peers. *Journal of Educational Psychology*, 90(2), 202–209.
- Wentzel, K. R. (2000). *Teachers' beliefs about pedagogical caring*. Unpublished manuscript. College Park: University of Maryland.
- Wentzel, K. R. (2003). Motivating students to behave in socially competent ways. *Theory into Practice*, 42(4), 319–326.
- Willis, S., & Brophy, J. (1974). Origins of teachers' attitudes toward young children. *Journal of Educational Psychology*, 66(4), 520–529.
- Wubbels, T., Brekelmans, M., den Brok, P., & van Tartwijk, J. (2006). An interpersonal perspective of classroom management in secondary schools in the Netherlands. In C. Evertson, & C. Weinstein (Eds.), *Handbook of classroom management: Research, practice, and contemporary issues* (pp. 1161–1193). Mahwah, NJ: Lawrence Erlbaum Associates.
- Wubbels, T., Brekelmans, M., den Brok, P., Wijsman, L., Mainhard, T., & van Tartwijk, J. (2014). Teacher-student relationships and classroom management. In E. T. Emmer, E. Sabornie, C. Evertson, & C. Weinstein (Eds.), *Handbook of classroom management: Research, practice, and contemporary issues* (2nd ed.) (pp. 363–386). New York: Routledge.
- Yoon, J. S. (2002). Teacher characteristics as predictors of teacher-student relationships: stress, negative affect, and self-efficacy. *Social Behavior and Personality: An International Journal*, 30(5), 485–493.