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Child-perceived teacher emotional support, its relations with teaching practices, and task persistence

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24	Abstract	This study examined relations between child-reported teacher emotional support, teaching practices, and children's task-persistent learning behaviour. The study was carried out in Estonia, where a students' first teacher advances with his/her students and teaches all primary subjects in the first 3 years of schooling. In total, 660 sixth-grade children reported about their first teacher's emotional support. Teachers' child-centred and teacher-directed practices were observed with the Early Childhood Classroom Observation Measure (ECCOM); results included 38 teachers in Grade 1, and 37 in Grade 3. Within the same grades, teachers reported on their affection for students, as well as their behavioural and psychological control over students. Teachers also	

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Child-perceived teacher emotional support, its relations with teaching practices, and task persistence

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Abstract This study examined relations between child-reported teacher emotional support, teaching practices, and children's task-persistent learning behaviour. The study was carried out in Estonia, where a students' first teacher advances with his/her students and teaches all primary subjects in the first 3 years of schooling. In total, 660 sixth-grade children reported about their first teacher's emotional support. Teachers' child-centred and teacher-directed practices were observed with the Early Childhood Classroom Observation Measure (ECCOM); results included 38 teachers in Grade 1, and 37 in Grade 3. Within the same grades, teachers reported on their affection for students, as well as their behavioural and psychological control over students. Teachers also evaluated each of their student's task persistence. As shown by ECCOM results, retrospective student-reported teacher emotional support tended to be positively related to child-centred practises, and negatively related to teacher-directed practises in Grade 3, while also negatively related to teacher-reported psychological control in Grade 1. Although higher perceived emotional support was related with more persistent learning behaviour on an individual level, general task persistence was predicted primarily by teacher-reported practices at the classroom level.

Keywords Teacher emotional support · Child perception · Child-centred and teacher-directed teaching practices · Teacher affection · Behavioural control · Psychological control

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Introduction

Students' perceived teacher behaviours, such as teacher's emotional support, have been found to influence their learning motivation, behaviour, and academic outcomes (Patrick, Kaplan and Ryan 2007; Roorda, Koomen, Spilt and Oort 2011). However, each student perceives his/her teacher's behaviour from both the teacher's whole-class practices as well as individual interactions. Thus, it is of importance to examine the relationships between students' perceived teacher behaviour and teacher's teaching practices measured by observation and self-reports, and to analyse their joint influences on students' learning. The knowledge of these relations provides validity for assessments of teaching practices and is of practical importance for teachers to acknowledge students' different viewpoints. Therefore, the present study aims to examine the relationships between child-perceived teacher emotional support (Authors 2016a; Patrick et al. 2007), observed child-centred, and teacher-directed practices (see Childhood Classroom Observation Measure ECCOM; Stipek and Byler 2004), and teacher-reported affection, behavioural, and psychological control (see Kiuru et al. 2012). Moreover, in order to examine the unique role on learning behaviour, children's task-persistent learning behaviour was investigated by including all three measures of teaching jointly.

Teacher's emotional support

Teachers who show high emotional support are warm and kind, engage in positive and respectful communication with children, are sensitive to children's needs and interests, provide children with appropriate levels of autonomy, and help them feel comfortable in the classroom (Hamre and Pianta 2010). Students perceive emotional support as liking and caring expressed by a teacher, and this encourages students to invest in learning and follow teacher's instructions (Patrick et al. 2007). Promoting mutual respect and interaction among students supports students' feelings of belonging and autonomy (cf. Deci and Ryan 2000) and thus promotes learning engagement (Patrick, Kaplan and Ryan 2011).

Each student perceives teacher behaviour differently primarily due to objective reasons—teachers differ in general teaching practices and in their individualised support (e.g. Göllner, Wagner, Eccles and Trautwein 2017; Hamre and Pianta 2010). In addition, student perceptions differ because students differ in their previous experiences and beliefs (see Bandura1993; Grolnick, Ryan and Deci1991). Although each child perceives emotional support differently, teacher general practices may still differ such that students in one class generally perceive teacher support differently from students in another class. In several studies, teacher emotional support has been studied at the classroom level both through observations (Pianta et al. 2008) and via teacher reports (Archambault, Pagani, and Fitzpatrick 2013; Curby, Rimm-Kaufman and Ponitz 2009). These studies have also shown the benefits of higher general teacher emotional support to children's adaptive learning behaviour and academic achievement (e.g. Archambault et al. 2013; Curby et al. 2009). Thus far, the relations among general teaching practices and student-perceived emotional support have been under-examined. One study examined the relationships between students' reported teaching practices and observed teaching practices via the Classroom Assessment Scoring System (CLASS) that directly measures classroom-level emotional support besides instructional support and classroom organisation. This study showed that student reports, aggregated at the classroom level, were not very reliable to assess teacher practices (Downer, Stuhlman, Schweig, Martinez and Ruzek 2016).

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Observed and reported teaching practices and emotional support

In the present study, a widely used observational tool, ECCOM, was utilised to assess two dimensions of child-centred and teacher-directed practices (Stipek and Byler 2004). These practices differ in the type of teacher and student activities, or in the degree to which teachers allow children to actively construct their knowledge. Child-centred teaching practices emphasise the active knowledge construction process, include children in various discipline-related decision processes, and create a positive social climate via individual support and encouragement of peer interactions (Authors 2014; McCombs 2010; Stipek and Byler 2004; Woolfolk Hoy and Weinstein 2011). In contrast, teacher-directed practices are characterised by teacher dominance and control, wherein students are regarded as passive 'receivers' (Gettinger and Kohler 2011; Woolfolk Hoy and Weinstein 2011). Thus, teachers individually encourage and emotionally support children primarily through child-centred, not teacher-directed practices. A study in kindergarten confirmed that the highest child-centred and lowest teacher-directed practices as evaluated by ECCOM were related to a medium-to-high score of Emotional Support as evaluated by CLASS (Salminen et al. 2012).

Moreover, in ECCOM, each dimension consists of and is measured by three subscales: management, instruction, and climate (Stipek and Byler 2004; Authors 2017a). Management relates to child responsibility, choice of activities, disciplinary strategies, and instructions for academically related activities. Instruction encompasses learning standards, coherence of instructional activities, instructional conversation, and academic subjects like literacy and math. Climate consists of items dealing with support for communication and interpersonal skills, student engagement, and individualization of learning activities; thus, is also related to emotional support. So far, there have been no studies with subscales, but it may be expected that emotional support is more apparent in climate subscales than in general scores.

Besides observed teaching, another way of measuring teaching practices is through teacher self-reports. One framework of teacher self-reported teaching in the classroom research has departed from parenting studies (Barber 1996; Baumrind 1967) to examine teacher-reported affection (responsiveness), behavioural, and psychological control (Dever and Karabenick 2011; Kiuru et al. 2012; Authors 2016b; Walker 2008). Affection refers to the extent to which adults show affective warmth, acceptance, and involvement. Behavioural control refers to attempts to direct a child by way of limits and demands. Psychological control refers to attempts to control the child's thinking and emotions through psychological means, such as withdrawal of affection, shaming, and induction of guilt. Thus, high emotional support is related both with high affection and low psychological control.

Emotional support, teaching practices, and task persistence

Empirical research has confirmed that perceived emotional support is associated with student engagement, achievements, and self-regulation (Klem and Connell 2004; Patrick et al. 2007; Skinner and Belmont 1993). One of the indicators of engagement is persistence in completing school tasks. High task persistence is characterised by demonstrating effort and not giving up easily in the face of challenges or difficult tasks, while low task persistence is characterised by a tendency to quit when faced with complicated tasks (Zhang, Nurmi, Kiuru, Lerkkanen and Aunola 2011; Yen, Konold and McDermott 2004). Authors (2016a) showed that students' retrospectively examined first-grade teachers' emotional support was related to children's task persistence and reading skills in Grade 6. Teacher's emotional support was related to higher

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self-concept in reading, and mediated the effect of emotional support on task persistence and reading skills.

Many studies have confirmed that child-centred practices are mostly beneficial, and teacher-directed practices mostly detrimental, for motivation and learning behaviour, including task persistence (Authors 2014, 2018; Lerkkanen et al. 2012; Perry, Donohue and Weinstein 2007; Turner et al. 2002). Research has also demonstrated the detrimental effect of psychological control on students' development (Barber 1996; Soenens, Sierens, Vansteenkiste, Dochy and Goossens 2012; Soenens and Vansteenkiste 2010). Specifically, psychological control has been found to relate to adverse outcomes through a lack of satisfying basic psychological needs (e.g. Assor, Kaplan, Kanat-Maymon and Roth 2005; van der Kaap-Deeder, Vansteenkiste, Soenens and Mabbe 2017).

Aims and hypotheses

The main aim of this study was to examine relations between child-reported teacher's emotional support and teaching practices. An additional aim was to study the joint effect of perceived emotional support and teaching practices on children's task-persistent learning behaviour. Child-centred and teacher-directed teaching practices were observed, and affection, behavioural, and psychological control examined with teacher reports in Grades 1 and 3. Child-perceived emotional control of the first classroom teacher was assessed retrospectively in Grade 6 (see also Authors 2016a). Retrospective reports were used because researchers have been rather cautious about using opinions from students who are still in primary school (Roorda et al. 2011). The design of the study was possible due to the specifics of the educational system in Estonia, where a single classroom teacher is responsible for all primary subjects in the first three grades of schooling. Students were therefore asked about this teacher's emotional support. The hypotheses were as follows.

First, it was predicted that more frequent usage of child-centred and less frequent usage of teacher-directed teaching practices would be positively related to students' retrospectively assessed perceived emotional support, both in Grade 1 and Grade 3. Namely, the creation of a positive social climate as well as supporting and encouraging students forms a part of child-centred, but not teacher-directed practices (Authors 2014; McCombs 2010; Stipek and Byler 2004; Woolfolk Hoy and Weinstein 2011). As students may better remember teacher practices at a later time, relations were expected to be higher for observations in Grade 3 than in Grade 1. And as the climate subscale specifically taps emotional support, it was expected that relations would be higher for this subscale than for the whole scale.

Second, it was expected that higher teacher affection and lower psychological control would be related to higher perceived emotional support. Affection includes showing warmth and acceptance, while psychological control includes withdrawal of affection, shaming, and induction of guilt (Baumrind 1967; Dever and Karabenick 2011; Kiuru et al. 2012; Walker 2008). High affection and low psychological control also tend to create conditions that satisfy basic psychological needs (Assor et al. 2005; van der Kaap-Deeder et al. 2017).

Third, it was hypothesised that higher perceived emotional support is related to higher task persistence on an individual level. Respect and care from a teacher supports students' feelings of belonging and autonomy (Deci and Ryan 2000) and support engagement and persistence in completing tasks (Patrick et al. 2011).

Fourth, it was expected that perceived emotional support—together with higher child-centred (as compared with teacher-directed) practices, teacher-reported affection, behavioural

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control, and lower psychological control—together predict students' task persistence at the classroom level (cf. Authors 2014; Lerkkanen et al. 2012; Patrick et al. 2011; Soenens et al. 2012; Turner et al. 2002).

Method

Sample and procedure

The study sample came from 53 different classrooms in a larger longitudinal study 'Kindergarten-School Study' (see Authors 2014). In April–May of Grade 6, students were asked to complete a questionnaire concerning their first teacher's support. (In the Estonian school system, the first teacher advances with their students from Grade 1 until Grade 3, teaching the same group of students for 3 years.) In total, 660 students (333 boys; 327 girls) reported on their first teacher's emotional support.

The same first teachers were observed throughout February–March in Grade 1 and Grade 3. In Grade 1, 38 teachers were observed, while in Grade 3, 37 teachers were observed. Teachers were observed by two trained observers throughout three subsequent lessons in a single school day. In April–May for Grade 1 and Grade 3, teachers were asked about their teaching practices and about students' task-persistent learning behaviour. In Grade 1, 47 teachers completed the questionnaires, while in Grade 3, 50 teachers completed the questionnaires. Teachers' mean age was 42.28 years (SD = 10.11), and their average work experience was 19.56 years (SD = 10.29) at the time of Grade 1.

Measures

Constructs, labels, instruments (original and modifications), number of items, and reliabilities of the measures are shown in the Appendix Table 2.

Students' perceptions of teacher emotional support

First, students were asked to write down the name of their first teachers. Students were matched with their teachers according to this report. Second, students had to rate each item with respect to this teacher. The four items for assessing students' perceptions of teacher emotional support were adapted from *Perceptions of the classroom social environment questionnaire* (Patrick et al. 2007; see also Authors 2016a). The items tapped the perceptions that a teacher cares about and likes the student as a person (e.g. 'The teacher respected your opinion'). Students had to use a 5-point Likert-type scale (1—*not at all correct*; ….5—*absolutely correct*).

Observed teaching practices

The ECCOM (Stipek and Byler 2004) was used to assess child-centred and teacher-directed practices. The ECCOM has been translated and successfully adapted for use in Estonian educational settings (for adaptations of the ECCOM, see Authors 2017a). Both types of practices included 14 items that were rated on a 5-point scale based on the percentage of time each type of practice was visible during the observation: 1 = the practice is rarely seen (0–20% of the time) to 5 = the practice

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predominates (80–100% of the time). Items tapped management (child responsibility, management, choice of activities, and disciplinary strategies), instruction (learning standards, coherence of instructional activities, teaching concepts, instructional conversation, literacy instruction, and math instruction), and climate (support for communication and interpersonal skills, student engagement, and individualization of learning activities). The exact wording of each item differed among types. For example, the Individualization of Learning Activities item was described as 'Teacher is attentive to children's individual skill levels and adapts tasks accordingly' (Child-Centred Practices) and 'Tasks are not flexible or adapted to children's individual needs' (Teacher-Directed Practices). Each teacher received two scores: one reflecting the mean of child-centred practices, and the other reflecting the mean of teacher-directed practices. As child-centred and teacher-directed practices were highly negatively correlated (− .85 and − .78, respectively, for Grades 1 and 3), the composite score of child-centred and reverse score of teacher-directed practices were also used, both of which have been used in earlier studies (Hauser-Cram, Sirin and Stipek 2003; Lerkkanen et al. 2012; Authors 2017b).

Teacher-reported practices

We created the Teacher-Reported Practices Scale (see Authors 2014) based on a prior questionnaire for parents. The questionnaire included three items for Affection (e.g. 'I encourage children to be independent/to do their best', 'I accept children's opinions'), three for Behavioural control (e.g. 'If needed, I punish children'), and three for Psychological control (e.g. 'I tell children how much I have done for them'). Teachers were instructed to think about the children they were teaching and to rate each question on a 5-point scale (1—never, 5—always).

Task-persistent learning behaviour

Teachers assessed children's task persistence using the Behavioural Strategy Rating Scale (see Zhang et al. 2011 for the original scale and its validation). Teachers were first asked to think about and recall how a certain child typically behaved in a classroom learning situation, and then to rate the child's behaviour on a 5-point rating scale (1 = not at all; 5 = to a great extent). Two statements assessed the degree to which children were persistent (e.g. 'shows activity and persistence in activities and solving tasks'). Three items dealt with children's lack of persistence and task-irrelevant behaviours (e.g. 'easily loses his/her focus when the activity or task is not going well'). Before creating an average across the five statements, the three negatively worded items were reverse scored (maximum score = 5).

Data analysis

Due to the nested nature of our data (i.e. students in the same classroom share one teacher), a multilevel modelling technique (Heck and Thomas 2015) was used to examine the classroom-level correlations between students' perceived teacher emotional support and other teaching practices (i.e. observed teaching and teacher self-report teaching). For variables at the same data level, including both individual-level variables (e.g. students' perceived teacher emotional support and teacher rated each students' task persistence) and classroom-level variables (e.g. observed teaching and teacher self-report teaching), Pearson's r was calculated to measure their correlations.

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In addition, multilevel modelling was used to examine the joint influence of students' perceived teacher emotional support, observed teaching, and teacher self-report teaching practices on students' task persistence. For individual-level variables, intra-class correlations (ICC) were calculated in order to determine their proportion of variance due to classroom differences (between-classroom variation).

All analyses were performed using the Mplus statistical package (Version 8; Muthén and Muthén1998–2017). The standard missing-at-random (MAR) approach was applied (Muthén and Muthén1998–2017). The parameters of the models were estimated using FIML estimation with non-normality robust standard errors (MLR estimator; Muthén and Muthén1998–2017). For all models, goodness of fit was evaluated using four indicators: chi-square, Bentler's comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). According to Heck and Thomas (2015), CFI and TLI values above 0.95 and RMSEA values below 0.06 can be considered as indicators of good fit of the model to the data.

Results

Correlations among three measures

Descriptive statistics and correlations among the study variables are shown in Table 1. Since ECCOM has one subscale (i.e. Climate) which is close to the concept of emotional support, it was listed out to show more depth correlations between students' perceived emotional support and observed teaching practices. As shown in Table 1, although Grade 1 observed child-centred practices (OCC1), teacher-directed practices (OTD1), and their Climate subscales (OCC-CL1 and OTD-CL1, respectively) did not correlate with students' perceived emotional support (SPE) significantly, the coefficients showed a tendency for SPE to correlate with OCC1 and its climate positively, and with OTD1 and its climate negatively. In addition, SPE demonstrated a significant negative correlation with teacher-reported psychological control in Grade 1 (TPC1; $r = -.50$, $p < .001$).

At third grade, SPE had a significant positive correlation with child-centred practices' climate (OCC-CL3; $r = .35$, $p < .05$) and a significant negative correlation with teacher-directed practices (OTD1; $r = -.44$, $p < .01$) and its climate (OTD-CL3; $r = -.48$, $p < .01$). However, no significant correlations were found between SPE and teacher-reported affection, behaviour control, or psychological control.

The joint influences of three measures on task persistence

One of the research aims was to examine the unique contribution of each measure to students' learning behaviour. Multilevel modelling was utilised to account for the nested nature of our study variables and to include all study variables together. First, intra-class correlations (ICC) were calculated for SPE and task persistence in Grades 1 and 3 (TP1 and TP3). All were significant (.22, .14, .08, respectively, for SPE, TP1, TP3; all $p < .01$) and thus were analysed at both the between and within levels. Second, since child-centred practices and teacher-directed practices were highly related, a composite score was used so that multicollinearity effects could be reduced (Dormann et al. 2013).

Two separate models were run for data from Grades 1 and 3, respectively (see Figs. 1 and 2). In Grade 1, the model was just-identified (i.e. model fits: chi-square = 0, df = 0, CFI = 1, TLI = 1,

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Q21 **Table 1** Descriptive statistics and correlations of student-perceived emotional support, observed teaching practices, teacher-reported teaching, and students' task persistence at Grades 1 and 3

t1.2		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
t1.3	M	3.74	2.86	2.78	2.70	2.88	4.64	3.18	1.94	3.01	2.58	2.93	2.69	4.62	3.09	1.92	3.35	3.54
t1.4	SD	.92	.97	.99	.92	1.05	.32	.66	.76	1.14	1.15	1.18	1.30	.29	.98	.71	1.13	1.1
t1.5	1. SPE	–																
t1.6	2. OCC 1	.28	–															
t1.7	3. OTD 1	−.34	−.85***	–														
t1.8	4. OCC-CL 1	.31	.91***	−.81***	–													
t1.9	5. OTD-CL 1	−.29	−.72***	.94***	−.79***	–												
t1.10	6. TA 1	−.22	−.27	.23	−.23	.13	–											
t1.11	7. TBC 1	−.20	−.15	.26	−.10	.18	.02	–										
t1.12	8. TPC 1	−.50***	.04	−.02	.08	−.09	−.08	.20	–									
t1.13	9. OCC 3	.26	.33 +	−.29	.23	−.14	−.02	−.04	.00	–								
t1.14	10. OTD 3	−.44**	−.37*	.42*	−.29	.29	.23	.01	−.02	−.78***	–							
t1.15	11. OCC-CL 3	.35*	.31	−.30	.24	−.16	−.09	−.09	−.04	.97***	−.80***	–						
t1.16	12. OTD-CL 3	−.48**	−.34 +	.38*	−.27	.26	.24	.06	.01	−.71***	.98***	−.76***	–					
t1.17	13. TA 3	−.09	−.05	.04	.07	−.04	.53***	.02	−.13	.05	.00	.05	.00	–				
t1.18	14. TBC 3	.09	−.23	.27	−.20	.27	.02	.23	−.08	−.11	.09	−.14	.15	.16	–			
t1.19	15. TPC 3	−.12	.00	−.08	.13	−.09	−.18	.05	.46**	.24	−.22	.23	−.16	−.07	.12	–		
t1.20	16. TP 1	.08	−.25	.15	−.27	.17	.33*	.06	−.21	−.03	−.16	−.01	−.20	.34*	.04	−.16	–	
t1.21	17. TP 3	.14**	−.12	.13	−.11	.14	.41*	−.06	−.12	−.10	.05	−.11	.04	.44*	−.18	.06	.65***	–

SPE student-perceived emotional support, *OCC* observed child-centred; *OTD* observed teacher-directed, *OCC-CL* observed child-centred: classroom climate, *OTD-CL* observed teacher-directed: classroom climate, *TA* teacher-reported affection; *TBC* teacher-reported behavioural control, *TPC* teacher-reported psychological control, *TP* teacher-rated task persistence

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RMSEA = 0), which indicated a perfect fit for the model (Heck and Thomas 2015). The results showed that, at the classroom level, teacher affection (TA1) associated with task persistence (TP1) significantly ($\beta = .32, p < .05$), whereas at the individual level, SPE associated with TP1 positively ($\beta = .11, p < .01$). In addition, the results showed that, at the classroom level, SPE was negatively correlated with TPC1 ($r = -.54, p < .001$), which confirmed the results mentioned above. Finally, the composite score of child-centred and teacher-directed practices (OCC-TD1) was found to be negatively correlated with teacher-reported behaviour control (TBC1) ($r = -.27, p < .05$). Moreover, the R^2 showed that the classroom-level predictors (i.e. SPE, OCC-TD1, TA1, TBC1, and TPC1) explained 16.9% of the variance of TP1, whereas the individual-level predictor (i.e. SPE) explained only 1.2% of the variance.

In Grade 3, the model was also just-identified and indicated a perfect fit for the model. Again, the results showed that, at the classroom level, TA3 positively associated with TP3 ($\beta = .56, p < .01$). However, the role of TBC3 and TPC3 on TP3 was showed to be marginally significant. At the individual level, SPE positively associated with TP 3 ($\beta = .18, p < .001$). Moreover, the results showed that OCC-TD3 correlated with SPE positively at classroom level ($r = .43, p < .01$). In addition, the R^2 showed that the classroom-level predictors (i.e. SPE, OCC-TD3, TA3, TBC3, and TPC3) explained 38.7% variance of TP3, whereas individual-level predictor (i.e. SPE) explained 3.1% variance.

Discussion

Experiencing emotional support from teachers creates a context where students feel safe, dare to try new things, exert effort, and engage in learning. Thus, emotional support from teachers is acknowledged as an important source of student development and learning. Although it is

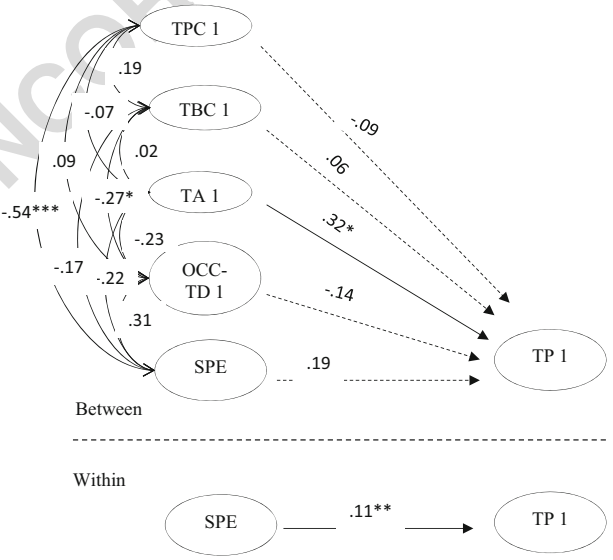

Fig. 1 The joint contribution of student-perceived emotional support, observed teaching, and self-reported teaching on task persistence in grade 1. SPE, student-perceived emotional support; OCC-TD, composite score of observed child-centred and teacher-directed; TA, teacher-reported affection; TBC teacher-reported behavioural control; TPC, teacher-reported psychological control; TP, teacher-rated task persistence

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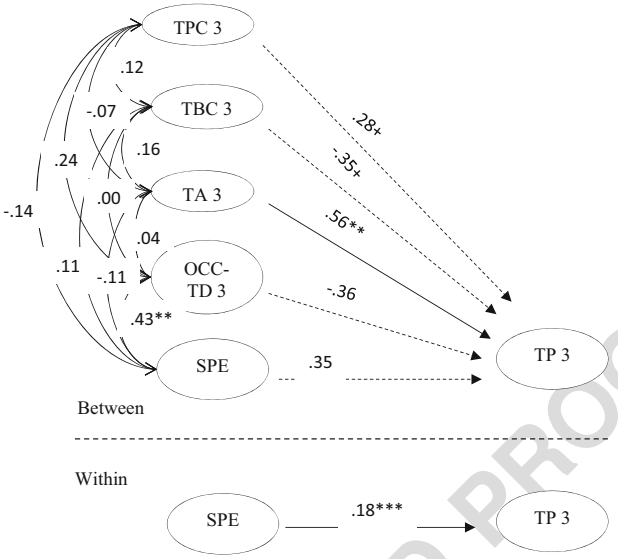

Q3 **Fig. 2** The joint contribution of student-perceived emotional support, observed teaching, and self-reported teaching on task persistence in grade 3. SPE, student-perceived emotional support; OCC-TD, composite score of observed child-centred and teacher-directed; TA, teacher-reported affection; TBC, teacher-reported behavioural control; TPC, teacher-reported psychological control; TP, teacher-rated task persistence

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expected that some teaching practices put more emphasis on emotional support than others, only a few studies have explicitly studied relations between general teaching practices and student-perceived support. Our study aimed to examine relations between observed and teacher-reported teaching practices and students' perceived emotional support during the first years of school. Retrospective student-reported teacher emotional support tended to be positively related to child-centred and negatively to teacher-directed practices as observed by the observational tool ECCOM in Grade 3, and it was also negatively related to teacher-reported psychological control in Grade 1. While higher perceived emotional support was related with more persistent learning behaviour on an individual level, general task persistence was predicted mainly by teacher-reported practices at the classroom level.

Perceived emotional support and teaching practices

When using sixth graders' reports of their first teacher's emotional support, it was expected that students would remember how positive, caring, and respectful the classroom atmosphere had been, and how sensitive to their needs and interests teachers had been (Hamre and Pianta 2010; Patrick et al. 2007). Although students had been taught by the same teacher first 3 years in school, teachers might change their general teaching practices and individualised support for each student during these years. Teachers engage in teaching practices, taking into account the specifics of learnt to be material and also skill level of students in the classroom (Authors 2018). Thus, relations between student reports and teacher practices in first and third grades were examined, with expectations that relations would be higher for Grade 3 as children might remember better the later practices. According to ECCOM, child-centred and teacher-directed practices are observed separately; however, the scores are highly negatively related—the more teacher uses one type of practices, the less she applies the others. Both separate and combined

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scores were used (Hauser-Cram et al. 2003; Lerkkanen et al. 2012; Authors 2017b) and also separate climate subscale score (see Authors 2017a). As expected, students retrospectively perceived higher emotional teacher support when teachers applied teacher-directed practices less frequently as compared to child-centred practices in Grade 3. Teacher-directed practices are directed to acquiring basic academic skills with teacher's initiative and teacher-provided tasks while students are regarded as passive 'receivers' (Gettinger and Kohler 2011; Woolfolk Hoy and Weinstein 2011). Thus, students may experience control and demands rather than support from teachers during these practices. This may be one of the reasons why students in teacher-directed classrooms tend to have lower motivation for learning and lower levels of interest (Authors 2018; Lerkkanen et al. 2012; Perry et al. 2007). Typically, only general ECCOM scales are used, but three subscales are separate in the original: management, instruction, and climate (Stipek and Byler 2004). In a validation study, Authors (2017a) also differentiated these subscales, but they also showed that relations among subscales were very high. The findings of this study indicate that emotional support was a bit better tapped by the climate subscale, thus this subscale may be more appropriate to use when analysing the emotional development of children.

Teacher reports on their practices have been used similarly to parental reports (Dever and Karabenick 2011; Kiuru et al. 2012; Authors 2016b; Walker 2008). It was found that students' perceived emotional support was only negatively related to teacher-reported psychological control in Grade 1, but not related to other teacher-reported practices. It might be expected that teachers with high affection are perceived as emotionally supportive. That it was not found may be related to biased teacher reports somehow—due to social desirability, teachers may report to be more caring. It is also possible that even a few humiliating comments referring to guilt or shame may trigger negative experiences that children remember more than daily caring expressions. Similarly, earlier studies have shown a strong negative effect of psychological control on child development (Barber 1996; Soenens et al. 2012; Soenens and Vansteenkiste 2010). In addition, teachers with high psychological control may create an environment where children feel insecure and their basic needs for relatedness not satisfied (Assor et al. 2005; van der Kaap-Deeder et al. 2017). It can only be hypothesised why relations with psychological control were visible only in Grade 1 and not in Grade 3. It may be that teacher behaviours like affection withdrawal, inducing guilt, and shame are perceived as especially harmful when students are younger. In addition, children may get used to these practices with time and thus do not perceive them as especially unpleasant later on in life.

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Emotional support, teacher practices, and task persistence

Since, as expected, modest correlations were found between students' perceived emotional support, observed teaching practices, and self-reported teaching practices, it was of interest and importance to examine each measures' unique contribution to students' learning behaviour. Expected relations on an individual level in both grades were uncovered—students who reported higher teacher emotional support were marked by teachers as being more task persistent than those who perceived emotional support as lower. Teachers support students' interest and motivation when giving tasks that are meaningful and in accordance with student's skill level. Emotionally supportive teachers may be more perceptive both of a child's interests and difficulties, and thus select adequate tasks which raise the student's interest and support their engagement (Klem and Connell 2004; Patrick et al. 2007; Skinner and Belmont 1993). When children feel secure, they also tend to exert more effort in learning, even in challenging situations (Deci and Ryan 2000). Emotionally supportive teachers may

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also elicit positive behaviours from children, as the children strive to please their teacher. Earlier empirical research has referred to the supportive effect of emotional support on students' behaviour, achievement, and motivation (Klem and Connell 2004; Patrick et al. 2007; Roorda et al. 2011).

Classrooms also varied in general perceived teacher support and teacher-reported task persistence. Still, the relation between emotional support and classroom-level task persistence was not significant. It may be that individualised practices related to specific students (Göllner et al. 2017; Hamre and Pianta 2010) may play a different role on student's perceived emotional support and his/her behaviour. Surprisingly, only teacher-reported affection had a positive effect on classroom-level students' task persistence in both grades. In other words, teachers who rated themselves as more supportive and kind towards students also rated the students as more task persistent in challenging situations. One reason of this finding may be related to the way students' task persistence was assessed—with teacher reports. Thus, teacher beliefs might influence both their self-ratings of teaching practices and ratings of students' task-persistent learning behaviour. Still, in another study that examined the teacher-reported affection and student-rated task persistence in Grades 1 to 3, teacher-reported affection was shown to have a positive influence on children-reported task persistence (Kiuru et al. 2014). The finding that observed practices were not related to classroom-level task persistence was also unexpected. In an earlier study, observed child-centred practices were found to be related to student-reported interest (that is, related to persistence) in Grade 1 (Authors 2018). However, Authors (2014) showed that the positive effect of child-centred practices depends on classroom peer context. Namely, the positive effect of child-centred practices was visible only in classrooms where general initial persistence was high, while teacher-directed practices were of benefit in classrooms with low persistence. Thus, the null findings may be related both to the way students' learning behaviour was assessed (with teacher reports, not students' reports or observations) and to different classroom contexts, the roles of which were not examined.

Limitations and future directions

Some limitations of the study should also be taken into account. First, the number of participating teachers and classrooms was relatively small. Second, retrospective reports were used for teacher emotional support, and student perceptions can change over time due to new school experiences. Retrospective reports were used due to difficulties in collecting young students' opinions (Roorda et al. 2011). Still, future studies should use other methods (e.g. interviews) to tap primary school students' perceptions of their teachers. Third, the study was carried out in Estonia, where one teacher teaches almost all lessons during the first 3 years of schooling. This creates a situation in which students may remember teacher behaviour better than in schools where teachers change each year. Thus, in countries like Estonia, the effects of teacher practices may be more visible but also more important for students' later achievements and well-being. Similar studies should also be carried out in other cultural contexts. Fourth, the peer context of the classroom was not taken into account, and this could alter findings. In the future, studies should be carried out with more classrooms that examine both teacher practices and classroom contexts, and their interactive effects on student perceptions and behaviour. Fifth, the present study discovered a significant association between teacher-reported affection and teacher-rated students' task persistence in both grades. This result should be interpreted with caution, however, because both variables were reported by the teacher, and the possible single-reporter effect may explain these associations. Still, it is interesting to note that, as opposed to teacher affection, teacher-reported psychological and behaviour control were not associated with task persistence. Therefore, a complete single-reporter effect explanation may not be valid. Sixth, the current study did not find a large amount of variance in predictors which

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explain students' task persistence. This may due to other variables which were not examined. For example, task persistence has been found to be affected by classroom motivational climate (Ames 1992) and goal structure (Meece, Anderman and Anderman 2006). It is important for future studies to include these variables as predictors for task persistence.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflicts of interest.

Appendix

t2.1 **Table 2** Constructs, labels, instruments, number of items, and reliabilities of the measures

t2.2 Construct	Label	Instrument	No. of items	Cronbach's alpha
t2.3 Students' perceptions of teacher emotional support	SPE	Perceptions of the classroom social environment questionnaire (adapted from Patrick et al. 2007; Authors 2016)	4	.88
t2.4 Observed child-centred practices at Grade 1/Grade3	OCC1/OCC3	Childhood Classroom Observation Measure (ECCOM; Stipek and Byler 2004)	14	.95/.97
t2.5 Observed teacher-directed practices at Grade1/Grade3	OTD1/OTD3	ECCOM	14	.94/.97
t2.6 Classroom climate in observed child-centred practices at Grade1/Grade3	OCC-CL1/OCC-CL3	ECCOM	4	.79/.92
t2.7 Classroom climate in observed teacher-directed practices at Grade1/Grade3	OTD-CL1/ OTD-CL3	ECCOM	4	.86/.93
t2.8 Composite score of observed child-centred and teacher-directed practices at Grade 1/Grade3	OCC-TD1/OCC-TD3	ECCOM	14	.96/ .97
t2.9 Teacher-reported affection at Grade 1/Grade3	TA1/TA3	Teacher-Reported Practices Scale (TRPS; Authors 2015)	3	.76/.69
t2.10 Teacher-reported behavioural control at Grade 1/Grade3	TBC1/TBC3	TRPS	3	.68/.71
t2.11 Teacher-reported psychological control at Grade 1/Grade3	TPC1/TPC3	TRPS	3	.71/.72
t2.12 Teacher-rated students' task persistence at Grade1/Grade3	TP1/TP3	Behavioural Strategy Rating Scale (see Zhang et al. 2011 for the original scale and its validation)	5	.91/.95

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Current themes of research:

Children's development and learning in kindergarten and school. The role of individual characteristics and contextual factors (e.g. teaching practices, parental support) in students' learning, considering varying skill levels and ages.

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Most relevant publications in the field of Psychology of Education:

Peets, K., & Kikas, E. (2017). Teachers' promotion or inhibition of children's aggression depends on peer-group characteristics. Journal of Clinical Child & Adolescent Psychology, 46, 848–857. DOI: https://doi.org/10.1080/15374416.2015.1079778

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Current themes of research:

Teaching practices. Reading development. Motivation and engagement.

Most relevant publications in the field of Psychology of Education:

Tang, X., Pakarinen, E., Lerkkanen, M.-K., Kikas, E., Muotka, J., & Nurmi, J.-E. (2017). Validating the early childhood classroom observation measure in first and third grade classrooms. Scandinavian Journal of Educational Research, 61, 275–294.

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