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Social Support and Classroom Management Are Related to Secondary Students' General School Adjustment: A Multilevel Structural Equation Model Using Student and Teacher Ratings

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Teachers' social support and classroom management are related to secondary students' achievement, domain-specific interest, and self-concept. However, little is known about whether social support and classroom management shape secondary students' general school adjustment beyond these domain-specific outcomes. To investigate this question, we drew on data from a large longitudinal research project (N = 5,607 secondary students, N = 227 classes). We applied student and teacher ratings of social support and classroom management to investigate their perspective-specific validities for predicting student outcomes. To measure students' school adjustment, we assessed achievement as a domain-specific indicator and school satisfaction, truancy, and self-esteem as more general aspects. Multilevel confirmatory factor analyses showed that both teachers and students distinguished between social support and classroom management. Teacher and student ratings of classroom management largely converged, whereas their perceptions of social support were not statistically significantly associated with one another. In multilevel structural equation modeling, both perspectives uniquely predicted students' school adjustment: Student-rated social support was linked to all outcomes at the student level and to school satisfaction and self-esteem at the class level. Classroom management showed only weak associations with outcomes at the student level, but at the class level, student-rated classroom management was related to truancy and teacher-rated classroom management was linked to school satisfaction and student achievement. These findings highlight the important role of teachers in students' general school adjustment and show the benefit of considering different perspectives and levels of analyses.

Educational Impact and Implications Statement

This study investigated associations between teachers' classroom management and social support with students' school adjustment. Results showed that classroom management and social support relate to student achievement in the teacher's subject domain, but also to more general outcomes such as overall school satisfaction, truancy, and self-esteem. Therefore, enhancing teachers' classroom management and social support could promote students' positive development in specific subject domains and beyond.

Keywords: social support, classroom management, school adjustment, teacher effectiveness, student and teacher ratings

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Social support and classroom management are key dimensions of teachers' interpersonal behavior because they are associated with the satisfaction of adolescents' developmental needs, and thus with their positive development (Hamre et al., 2013; Kunter & Voss, 2013; Roeser, Eccles, & Sameroff, 2000; Skinner, Furrer, Marchand, & Kindermann, 2008; Wubbels, Créton, Levy, & Hooymayers, 1993). In line with this assumption, there is cumulated empirical evidence that teachers' social support and classroom management are related to secondary students' achievement, interest, and self-concept in different subject domains (den Brok, Brekelmans, & Wubbels, 2004; Kunter et al., 2013; Scherer, Nilsen, & Jansen, 2016). However, it remains unclear whether social support and classroom management are also associated with more general outcomes that are not restricted to specific subject domains, such as school satisfaction, truancy, or self-esteem (Anderman, 2002; Baker, Dilly, Aupperlee, & Patil, 2003; Wentzel, 2003). Furthermore, some methodological challenges have not received sufficient attention in previous research. First, it is unclear to what extent different raters' perceptions of classroom management and social support converge and which perspective—student, teacher, or observer—provides the most valid information for predicting student outcomes (Wagner et al., 2016). Second, student ratings yield information on different conceptual levels of analysis (Lüdtke, Robitzsch, Trautwein, & Kunter, 2009), but this advantage has rarely been employed in previous research on classroom management and social support because a large number of classes are needed to disentangle the effects of student ratings at the individual and class level.

To address these issues, we used data from a large longitudinal research project among two cohorts of German secondary students (Jonkmann, Rose, & Trautwein, 2013). We asked 5,607 students and their homeroom teachers ($N = 227$ classes) to rate the teacher's social support and classroom management. In Germany, students usually spend the entire day with the same group of students. Each group of students is assigned a homeroom teacher who not only teaches at least one subject, but also goes on school trips with the class, counsels students and parents, and bears special responsibility for all class-related issues. Moreover, homeroom teachers in Germany retain their class for several years. Therefore, homeroom teachers' interpersonal behavior, in particular, can be assumed to be linked not only to outcomes in their specific subject, but also to students' general school adjustment. Our methodological approach of combining student and teacher ratings had some compelling advantages. It enabled us to investigate whether both teachers and students—at the individual student and at the class level—perceive classroom management and social support as distinct dimensions of teachers' interpersonal behavior. It also provided insights on the extent to which students' and teachers' perceptions of classroom management and social support converge. And most importantly, it enabled us to investigate differential relations between classroom management, social support and students' school adjustment depending on the perspective of the rater (student vs. teacher perspective) and the level of analysis (student vs. class level).

Classroom Management and Social Support

Social support and classroom management are widely considered the two central dimensions of teachers' interpersonal behavior (e.g., Hamre et al., 2013; Kunter & Voss, 2013; Wubbels, Créton, et al., 1993). Scholars agree that social support subsumes a variety of teacher behaviors (Kunter & Voss, 2013; Tennant et al., 2015), including, the overall emotional tone in the classroom, the extent to which teachers take a personal interest, provide encouragement to students, and show affection, acceptance, and respect (Patrick, Turner, Meyer, & Midgley, 2003). Supportive teachers also help students meet content-related challenges and adapt their instruction to students' individual learning needs (Strati, Schmidt, & Maier, 2017).

Classroom management comprises the organizational and group management methods teachers use to establish and maintain order and discipline as well as strategies to handle persistent behavior problems by individual students, such as disruptions, tardiness, or truancy (Emmer & Stough, 2001). By ensuring that students adapt their behavior to situational demands, time on task is maximized (Brophy, 2006). Communicating clear behavioral expectations and rules, introducing routines, and monitoring student behavior are particularly effective in this regard (Clunies-Ross, Little, & Kienhuis, 2008; Evertson & Weinstein, 2011; Mitchell & Bradshaw, 2013).

Considering that social support and classroom management describe essentially different kinds of teachers' interpersonal behavior, it appears reasonable to assume that both are empirically distinct constructs and this has been supported in prior research (Downer, Stuhlman, Schweig, Martinez, & Ruzek, 2014; Fauth, Decristan, Rieser, Klieme, & Büttner, 2014; Kunter & Baumert, 2006; Wagner, Göllner, Helmke, Trautwein, & Lüdtke, 2013). Yet, some studies found aspects of teachers' interpersonal behavior to be highly correlated (Hamre, Hatfield, Pianta, & Jamil, 2014; Wallace, Kelcey, & Ruzek, 2016). Therefore, further research is needed to reveal whether classroom management and social support can actually be distinguished empirically.

Classroom Management, Social Support, and Students' Domain-Specific Outcomes

According to prominent models of instructional quality, aspects of social support and classroom management are closely associated with higher achievement, more positive self-related beliefs, better attitudes, and behavioral outcomes in a given subject domain (e.g., Ferguson, 2012; Hamre et al., 2013; Kunter & Voss, 2013). From the perspective of self-determination theory (Ryan & Deci, 2000), the psychological process mediating these positive associations is students' basic need satisfaction (Gairns, Whipp, & Jackson, 2015; Skinner et al., 2008): If teachers prevent disruptions, assure that lessons start punctually (classroom management), and offer assistance with difficulties (social support), students will receive more opportunities to obtain content knowledge and complete their academic tasks successfully, giving them a feeling of competence in the corresponding subject domain (Brophy, 2006; Niemiec & Ryan, 2009). Furthermore, if teachers react sensitively to students' emotional needs and consider their personal interests (social support), students will feel more connected and respected as autonomous individuals (Ruzek et al., 2016; Skinner et al., 2008).

Empirical support for the link between classroom management, social support, and student achievement, self-related beliefs, attitudes, and behavioral engagement in the corresponding

subject domain is extensive. Various studies have found that overall *achievement* in the respective domain was higher in well-organized classrooms (Blank & Shavit, 2016; Kunter et al., 2013; Scherer et al., 2016; Wagner et al., 2016). In contrast, social support appeared to be less important for student achievement in secondary school (Kunter et al., 2013; Scherer et al., 2016; Wagner et al., 2016; Yildirim, 2012). From a theoretical perspective, this finding may appear unexpected. One explanation could be that teachers report offering more academic support to low-achieving students (Nurmi et al., 2013). In terms of *self-related beliefs*, prior research has found that students report higher domain-specific self-efficacy and self-concept when they feel supported by their subject teacher (den Brok et al., 2004; Rice, Barth, Guadagno, Smith, & McCallum, 2013; Scherer et al., 2016; Wagner et al., 2016). The close association appears reasonable considering that positive regard and encouragement from others as well as individual assistance in overcoming task-related difficulties could be particularly important for developing positive self-related beliefs (Harter, 1999; Lemay & Ashmore, 2006; Usher & Pajares, 2008). In contrast, the current state of research provides mixed results for classroom management. Some studies found a positive association, while others revealed a negative relationship or no link at all (den Brok et al., 2004; Scherer et al., 2016; Wagner et al., 2016). Even though the findings do not allow drawing of a clear conclusion yet, it is possible that classroom management only relates to higher self-related beliefs under certain conditions. For example, when students participate in creating rules, they might infer that they are on a par with adults, while they might feel infantilized, when rules are forced on them by the teacher alone (Watson & Battistich, 2006). For *student attitudes*, associations between both classroom management and social support and intrinsic value, interest, enjoyment, and satisfaction with class have been found (den Brok et al., 2004; Dietrich, Dicke, Kracke, & Noack, 2015; Kunter et al., 2013; Kunter & Baumert, 2006; Kunter, Baumert, & Köller, 2007; Rice et al., 2013). Similar results have been obtained for *behavioral outcomes,* with classes with more social support and classroom management exhibiting higher behavioral engagement in the corresponding subject domain (den Brok et al., 2004; Nie & Lau, 2009).

Classroom Management, Social Support, and Students' General School Adjustment

In contrast to the extensive body of research on the association between classroom management, social support, and domain-specific outcomes, less is known about secondary students' more general school adjustment. In the present work, we focused on school satisfaction, truancy, and self-esteem as a global attitude, behavior, and self-related belief, respectively, because they are of great practical relevance: School satisfaction and reduced truancy are related to higher school engagement and a lower risk of school dropout (Elmore & Huebner, 2010; Kearney, 2008; Sälzer, Trautwein, Lüdtke, & Stamm, 2012). Moreover, schools are increasingly asked to foster students' self-esteem, which is associated with a better ability to cope with emotions and greater psychological well-being (Lipnevich, Preckel, & Roberts, 2016; Moksnes, Moljord, Espnes, & Byrne, 2010; Orth, Robins, & Roberts, 2008).

From a theoretical point of view, there are at least two possible mechanisms linking teachers' interpersonal behavior to students' general school adjustment. First, as the empirical findings described above showed, social support and classroom management are associated with positive beliefs, attitudes, and behaviors in the corresponding subject domain. Bottom-up processes could, then, produce an accumulation of domain-specific outcomes at a more global domain-unspecific level (Harter, 1999; Rojas, 2006). A second, analog mechanism is to view each teacher's social support and classroom management as a component of students' overall school experience (Baker et al., 2003). Hence, each teacher contributes to students' perceptions of school as a context that supports their healthy development by meeting their basic psychological needs (Anderman, 2002; Baker et al., 2003; Roeser et al., 2000). Thereby, it is important to note that one significant teacher-student relationship can already be associated with secondary school students' positive general development, even though they have many teachers at the same time (Pajares & Urdan, 2008; van Ryzin, 2010).

There is some initial empirical evidence in support of these assumptions. In a study by Nie and Lau (2009), feeling supported by one's English teacher was associated with higher school satisfaction. Moreover, some studies revealed links between classroom management, social support, and secondary school students' general behavioral adjustment in school; for instance, they were correlated with less truancy and higher school engagement (Havik, Bru, & Ertesvåg, 2015; Jelas, Azman, Zulnaidi, & Ahmad, 2016). Our study aimed to extend these findings by investigating the association between homeroom teachers' social support and classroom management and students' general school adjustment in terms of self-esteem, school satisfaction, and truancy as well as achievement in the homeroom teacher's subjects as a domain-specific outcome. Beyond that, our study also addressed some important methodological challenges that have not been sufficiently investigated in prior research.

Methodological Issues in Research on Social Support and Classroom Management

Three different types of informants have frequently been used to assess social support and classroom management: students, teachers, and external observers (Turner & Meyer, 2000). Which rater provides the most valid information for predicting student outcomes is still a controversial issue (Wagner et al., 2016). Nonetheless, most prior studies have relied on only one of these informants and did not consider how this could impact their findings. Moreover, the multilevel nature of the data has often been ignored, particularly in research on social support. As will be outlined below, this may not only affect statistical inference, but is also problematic from a conceptual point of view (Lüdtke et al., 2009). Therefore, in this study we combined student and teacher ratings and analyses at the individual student level and the class level.

Assessment of Social Support and Classroom Management: Student and Teacher Perspectives

Student and teacher ratings are each associated with specific advantages, but also drawbacks. Student ratings are particularly appealing because students' individual experiences should be most relevant for their development (Lüdtke et al., 2009). Teacher ratings are expedient because teachers' professional backgrounds

make them experts on classroom processes (Kunter & Baumert, 2006). However, both student and teacher ratings have also been suspected of being invalid, with student ratings biased by individual idiosyncrasies and teacher popularity, and teacher ratings biased by self-serving strategies or ideals (Kopcha & Sullivan, 2007; Marsh & Roche, 1997; Miller, 2012; Stern, 1970; Wubbels, Brekelmans, & Hooymayers, 1993).

The presumption that student and teacher ratings are largely shaped by personal interpretations seems to be supported by the finding that their perceptions often diverge considerably: Studies administering identical items to students and teachers have found low-to-moderate correlations for social support, whereas convergence was substantial for classroom management (Kunter & Baumert, 2006; Wagner et al., 2016; Wubbels, Brekelmans, et al., 1993). These studies also showed that student and teacher ratings of classroom management and social support loaded onto different factors (Kunter & Baumert, 2006; Wagner et al., 2016). Furthermore, the few studies that considered both student and teacher perspectives typically found associations between classroom management, social support, and student outcomes to be stronger when the same source of information was used (e.g., Hughes & Kwok, 2007; Kunter & Baumert, 2006; Skinner et al., 2008; Wagner et al., 2016). This might be attributable to shared method bias, meaning that the association between predictor and outcome is artificially inflated, for example, because both are rated by the same person with a certain rater tendency (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Or, the lack of convergence and differential predictive validity may be due to the fact that students and teachers focus on different aspects when evaluating social support and classroom management (Kunter & Baumert, 2006). Thereby, teachers' perceptions of classroom management might add a particularly valuable perspective to student ratings because they can best evaluate whether their teaching objectives have been disturbed or not, whereas they might be less sensitive to students' need for individual support (Kunter & Voss, 2013).

Multilevel Issues in the Study of Classroom Management and Social Support

The second issue we raised with regard to the empirical findings presented above was that the multilevel nature of student ratings has often been neglected. This point is crucial because the interpretation of results largely depends on the level of analysis (Lüdtke et al., 2009; Raudenbush & Bryk, 2002). At the class level, students' individual ratings are aggregated to represent their shared perception of classroom management and social support, and analyses explain differences in outcomes between classrooms. In contrast, at the student level, analyses focus on students' individual interpretations, that is, the extent to which individual student perceptions diverge from the class average, to explain different student outcomes within the same classroom. Most of the studies discussed above did not appropriately disentangle the two levels or focused exclusively on the class level (e.g., Kunter et al., 2013; Rice et al., 2013). From a theoretical standpoint, it has been argued that the class level is of particular interest because classroom management and social support have been conceptualized as a feature of the classroom (Marsh et al., 2012). Moreover, analyses at the class level have methodological advantages because they counterbalance student idiosyncrasies so that associations can more likely be attributed to between-class differences in classroom management and social support rather than general rater tendencies (Lüdtke et al., 2009). Hence, it could be argued that results at the class level are less affected by shared method bias, at least to some extent (Hoyt, 2000). However, conducting analyses at the student level can also be worthwhile and it has been argued that students' individual ratings can hold valuable information, even though, they are shaped by students' idiosyncrasies and reflect students' unique interpretations of events (Downer et al., 2014; Schenke, Ruzek, Lam, Karabenick, & Eccles, 2017; Schweig, 2016). For example, students' individual perceptions can reveal whether teachers' behaviors match each student's individual needs (Eccles et al., 1993), as diverging perceptions may actually be grounded in unequal treatment of different students in response to their individual characteristics and behaviors (Babad, 2009; Nurmi & Kiuru, 2015). Thus, students' individual perceptions might be particularly relevant for social support because, in contrast to classroom management, supportive behaviors often address individual students rather than the whole class.

Multilevel modeling can be used to predict student outcomes at the individual and class level simultaneously, and so doing combine the advantages of the individual student and the class perspective (Raudenbush & Bryk, 2002). Before such analyses can be performed, however, one must investigate the factorial structure at each level separately to attain valid results (Muthén, 1994). Initial studies among elementary students indicated that classroom management and social support represent empirically distinguishable factors at both levels (Downer et al., 2014; Fauth et al., 2014). These studies also showed that simultaneous analyses at the student and class level are a very informative approach because the relationships between classroom management, social support, and school adjustment may largely depend on the level of analysis. However, the results did not yield a consistent pattern of associations (Dietrich et al., 2015; Downer et al., 2014; Fauth et al., 2014). Therefore, more research is needed to clearly underpin or reject the theoretical assumption that both social support and classroom management could be associated with student outcomes at the class level, whereas social support could be particularly predictive at the student level.

Present Study

In the present study, we drew on longitudinal data from a large sample of secondary school students and their homeroom teachers and linked both informants' perceptions of social support and classroom management to achievement, school satisfaction, self-esteem, and truancy. We addressed three central research questions using multilevel analyses.

First, because very few studies have combined student and teacher ratings with simultaneous analyses at the student and the class level (for exceptions, see, e.g., Downer et al., 2014; Kunter & Baumert, 2006), we tested whether social support and classroom management represented distinct factors at both levels and regardless of whether student or teacher ratings are applied. This is particularly important in light of recent work challenging their distinctness (e.g., Wallace et al., 2016).

Second, we examined the convergence of student and teacher ratings of social support and classroom management. We proceeded from the assumption that disagreement between students

and teachers is based on the fact that both perceive perspective-specific aspects of teachers' interpersonal behavior (Kunter & Baumert, 2006). Therefore, we expected that student- and teacher-rated social support and classroom management would represent distinct factors, resulting in a four-factor solution at the class level, with moderate to high correlations between student- and teacher-rated classroom management, but small correlations between student- and teacher-rated social support.

Our third and main research question concerned the association between classroom management, social support, and school adjustment. Thereby, this study is innovative in three aspects. First, prior research among secondary students has mostly focused on domain-specific outcomes. We argued that homeroom teachers' interpersonal behavior might not only be associated with outcomes in the subjects they teach, but also with students' general school adjustment due to their special function in students' school lives. Therefore, we included truancy, school satisfaction, and self-esteem in addition to achievement to extend our knowledge to broader outcomes. Furthermore, building upon our second research question, we investigated the perspective-specific validity of student and teacher ratings in predicting student outcomes. Finally, we disentangled the student and the class level which enabled us to discover potentially different patterns depending on the level of analysis. From a theoretical point of view (e.g., self-determination theory; Ryan & Deci, 2000), generally positive associations between classroom management, social support, and student development are plausible because both are linked to students' basic need satisfaction and therefore help to create a positive school context (Baker et al., 2003; Skinner et al., 2008). In line with this, prior research has shown that both are linked to student attitudes and behaviors in specific subject domains (e.g., den Brok et al., 2004) so that we, analogously, expected positive associations with school satisfaction and truancy. In contrast, particularly social support has been empirically linked to students' self-related beliefs in specific subject domains, whereas only classroom management has been related to achievement (e.g., Wagner et al., 2016).Therefore, we assumed that social support would be related to self-esteem and that classroom management would be linked to achievement. Thereby, we expected differential relations depending on the level of analysis and whether the student or teacher perspective was being considered. More precisely, we assumed that social support would be predictive at both the student and the class level, whereas classroom management would be primarily predictive at the class level. After all, management strategies usually address the classroom as a whole, whereas teachers might provide varying levels of social support to individual students (Nurmi & Kiuru, 2015). Moreover, we hypothesized that the student perspective, especially students' ratings of social support, would be more predictive of student development than the teacher perspective (Kunter & Voss, 2013; Lüdtke et al., 2009).

Method

Procedure

The present study draws on data from two cohorts and two measurement points: The first measurement point took place in the fall of the 2008–2009 school year when the students were in fifth and eighth grade; the second measurement point took place approximately 1 year later when students were in sixth and ninth grade. The first measurement point was used to assess students' baseline levels of school satisfaction, truancy, self-esteem, and German and mathematics achievement. The second measurement point represented the prime focus of our study because teachers had spent over a year with their class by this time, allowing potential effects to have unfolded. Both students and teachers rated classroom management and social support. In addition, students' school satisfaction, truancy, self-esteem, and achievement were assessed again. The achievement tests were obligatory, whereas filling out the questionnaires was voluntary and parents were asked for consent.

Sample

The present study was part of a larger longitudinal research project carried out in two German federal states (Baden-Württemberg and Saxony) to investigate student development in secondary school, specifically in the vocational track (Jonkmann et al., 2013). In Germany, students are allocated to either the vocational track or the academic track at the end of primary school based on prior achievement (Maaz, Trautwein, Lüdtke, & Baumert, 2008). In contrast to the academic track, students in the vocational track cannot proceed to higher education. The structure of the vocational track depends on the federal state: Either there is only one comprehensive school (Saxony) or students are further divided into lower track schools and intermediate track schools (Baden-Württemberg).

The study was conducted in 227 classrooms in 106 German schools: 31 schools included one participating classroom, 55 schools included two participating classrooms, and 20 schools included three or more participating classrooms. Note that in our sample, each classroom consisted of a fixed group of students. Hence, classroom composition remained constant throughout the school day. At the second (first) measurement point, 93% (95%) of the eligible students completed the achievement tests and 79% (82%) filled in the questionnaires. At the first measurement point, $N = 5{,}030$ students participated ($M = 22.26$ students per classroom, $SD = 5.01$). At the second measurement point, $N = 4{,}930$ students participated ($M = 21.72$ students per classroom, $SD = 5.15$). To use all available information, we included data from all students who had participated at either the first ($n = 677$), the second ($n = 577$), or both measurement points ($n = 4{,}353$), so that our final sample included $N = 5{,}607$ students (Enders, 2010). We found no statistically significant differences between students who participated at the first, second, or both measurement points in terms of grade level or socioeconomic status, but boys, students with a migration background and students from lower track schools were slightly overrepresented in the group of students who participated only once (see Table S1 in the online supplemental materials for more detailed results).

We assessed $n = 3{,}123$ fifth-grade students ($M_{age} = 11.14$, $SD = 0.59$; 131 classes) and $n = 2{,}484$ eighth-grade students ($M_{age} = 14.26$, $SD = 0.67$; 96 classes). Of these students, 54% were male. 28% had a migration background, meaning that at least one parent or the students themselves were not born in Germany. Students' socioeconomic status was indicated by the highest value of the international socioeconomic index of occupational status in the family (Ganzeboom, de Graaf, & Treiman, 1992), and was

45.52 on average (SD = 12.89). This value is calculated based on parents' occupation and integrates information on both income and education. Values can range from 16 = cleaner to 90 = judge. Students attended a comprehensive school (n = 2,155), a lower track school (n = 1,991), or an intermediate track school (n = 1,461).

The classes' homeroom teachers participated (N = 211) in addition to the students. In Germany, not only do homeroom teachers see their students every day, they also have a counseling function and usually accompany their class for at least 2 years. Homeroom teachers take on this role in all school types included in our study. On average, homeroom teachers spent 10.48 lessons each week with their class (SD = 5.44): The average number of lessons was 6.52 (SD = 2.47) in comprehensive schools, 8.00 (SD = 2.34) in intermediate track schools, and 16.06 (SD = 4.11) in lower track schools. At the second measurement point, most of the homeroom teachers had been teaching their class for at least 1 year, but some (15%) had only been teaching their class for 3 months. The teachers were on average 45.14 years old (SD = 10.09), had 19.74 years of job experience (SD = 11.00), and 30% were male.

Instruments

Students and teachers evaluated classroom management and social support on a 4-point scale ranging from 1 = *completely disagree* to 4 = *completely agree*. The items are displayed in Table A1 in the Appendix A. Most items were adopted from Baumert et al. (2008); two items for social support were newly developed on the basis of the concept of transformational leadership (Bass, 1990) to measure the extent to which teachers believed in their students' future. Students' school adjustment was assessed broadly: Achievement was measured with standardized tests; truancy, school satisfaction, and self-esteem were assessed via student report. The items are included in Appendix B.

Classroom management. Six items assessed the lack of disciplinary problems and disruptions in class as an indicator of efficient classroom management. Based on the results from exploratory factor analyses (see Results section), one item was excluded from this scale for the data analyses ($\alpha_{teacher}$ = .79; $\alpha_{student}$ = .83).

Social support. Teachers' patience and help regarding content learning as well as their appreciation of and personal interest in their students were measured with eight items ($\alpha_{teacher}$ = .81; $\alpha_{student}$ = .93).

Truancy. Six types of truancy (α_{t1} = .92, α_{t2} = .93) were measured on a scale from 1 = *never*, 2 = *two or three times*, 3 = *three or four times* to 4 = *five times or more*.

School satisfaction. Students' enjoyment and effort with respect to school were assessed with seven items (α_{t1} = .79, α_{t2} = .79) by Baumert, Gruehn, Heyn, Köller, and Schnabel (1997) on a 4-point scale ranging from 1 = *completely disagree* to 4 = *completely agree.*

Self-esteem. Four items (α_{t1} = .73, α_{t2} = .75) by Ravens-Sieberer and Bullinger (2000) were used to measure the students' appraisal of their own value on a 5-point scale ranging from 1 = *never* to 5 = *always*.

Achievement. Mathematics and German achievement were assessed via standardized achievement tests that were administered via a longitudinal balanced incomplete booklet design with anchor items. The tests covered standard content from the federal states' curricula in German and mathematics: The German test included several short texts to measure reading comprehension with a total of 60–76 items depending on the measurement point and student cohort (for a more detailed description see also Dumont, Trautwein, Nagy, & Nagengast, 2014). The mathematics test comprised 73–84 items covering grade-specific content such as arithmetic rules, the metric system, or linear equations. All items had an open-ended, closed-ended, or multiple-choice format. Item and person parameters for students' mathematics and German competence were estimated with a longitudinal, multidimensional two-parameter item response theory model. Unidimensionality, measurement invariance across different subpopulations (school type, gender), and partial measurement invariance across measurement points (Jonkmann et al., 2013) as well as reliability and validity were assured ($\alpha \geq .70$ for both achievement domains and both cohorts; standardized mean difference between school years: $0.17 \leq d \leq 0.34$). For further statistical analyses, we used weighted likelihood estimates of students' academic competence. Thereby, we standardized the weighted likelihood estimates scores for each test separately to assure comparability across subjects and cohorts.

To be able to investigate whether student achievement in German/mathematics is related to the social support and classroom management provided in these subject domains, we calculated an achievement variable on the basis of students' mathematics achievement when the homeroom teacher taught mathematics, German achievement when the homeroom teacher taught German, and the average of both tests when the homeroom teacher taught both subjects. We included only a subsample of n = 169 teachers who taught German and/or mathematics and their students (n = 4,151) in the analyses regarding student achievement. The total sample was used for all other student outcomes.

Covariates. All outcome variables were assessed at both measurement points so that we could control for the baseline level. In addition, we used gender (0 = female, 1 = male), migration background (0 = no migration background, 1 = migration background), and socioeconomic background as covariates at the student level. At the class level, we controlled for cohort (0 = fifth/sixth grade, 1 = eighth/ninth grade) and created two dummy variables for school type (lower: 0 = other, 1 = lower track; intermediate: 0 = other, 1 = intermediate track).

Data Analyses

As we were interested in investigating effects at both the student and the class level, we applied multilevel modeling (Raudenbush & Bryk, 2002). To test whether the factorial structure for social support and classroom management was equal at the student and the class level as well as for student and teacher ratings, we proceeded as suggested by Muthén (1994). Thereby, student and teacher ratings were included in a joint model and the factor indicators were treated as continuous variables[1] (Little, 2013).

[1] Results from the MCFA and MSEMs were almost identical when the factor indicators were treated as categorical variables using Bayesian estimation in Mplus (Muthén, & Asparouhov, 2012). Results from these analyses can be retrieved from the online supplemental materials (Figure S1 and Table S2).

First, we investigated the factor structure separately at each level using exploratory factor analyses (EFAs) with oblique geomin rotation. Next, we applied multilevel confirmatory factor analysis (MCFA; see Lam, Ruzek, Schenke, Conley, & Karabenick, 2015, for an application of MCFA to student ratings). Each item only loaded on the factor expected, and the residuals of parallel items on the student and teacher questionnaires were allowed to correlate (Little, 2013). To evaluate model fit, we followed Hu and Bentler (1999) and considered Tucker–Lewis index (TLI) and confirmatory fit index (CFI) values ≥.95, root mean square error of approximation (RMSEA) values ≤.06, and standardized root mean square residual (SRMR) values ≤.08 as indicative of good model fit. To compare different models, we evaluated changes in CFI and assumed the fit of two models to be equivalent when ΔCFI ≤ –.01 (Cheung & Rensvold, 2002).

We used multilevel structural equation models (MSEMs) as proposed by Marsh et al. (2009) to predict truancy, school satisfaction, self-esteem, and achievement. MSEMs have the advantage of simultaneously controlling for measurement error and sampling error. To control for measurement error at the student and the class level, classroom management and social support were measured with multiple indicators at both levels. To control for sampling error, the class mean was treated as a latent variable which was estimated by correcting the aggregated manifest class mean for its unreliability. We set up a series of random intercept MSEMs. Model A included classroom management and social support and controlled for the background variables (gender, migration background, socioeconomic status, school type, cohort). In Model B, the baseline level of the outcome variable was additionally entered to investigate the association between teachers' interpersonal behavior and change in the outcome variables. Another advantage of including the baseline level is that it controls for students' individual rater tendencies to some extent (Podsakoff, MacKenzie, & Podsakoff, 2012). In these models, we group mean-centered social support and classroom management, which allowed us to disentangle within-class and between-class effects of social support and classroom management on student outcomes (Lüdtke et al., 2009). The covariates gender, socioeconomic status, and migration background, and the baseline measures of the outcome variables were added at Level 1 and were grand-mean centered to adjust for individual differences between classes. The EFAs, MCFA, and MSEMs were analyzed with Mplus 7 (Muthén & Muthén, 1998–2012) using maximum likelihood estimation with robust standard errors.

As in most empirical studies, we had to deal with missing data. Two different types of missing data occurred: (a) complete lack of participation at a given measurement point, and (b) missing values on single items or scales. This resulted in 18% missing values on average in the student questionnaire and 8% missing values in the teacher questionnaire. To avoid listwise deletion, missing data were handled using full information maximum likelihood estimation (Enders, 2010).

Results

Preliminary Analyses

The means, standard deviations, intraclass correlations, and correlations for social support, classroom management, and student outcomes at the second measurement point are displayed in Table 1. The means indicate that students (M = 3.07) and teachers (M = 3.52) perceived high levels of social support. Interestingly, no teacher reported a degree of support below the theoretical mean. This resulted in a reduction in variance, which should be borne in mind when interpreting the results. Classroom management ratings were around the scale's midpoint ($M_{student}$ = 2.50, $M_{teacher}$ = 2.70). As the intraclass correlation shows, 20% and 24% of the variance in student ratings of classroom management and social support, respectively, could be attributed to differences between classrooms.

The correlations showed statistically significant and moderate associations between teacher-rated classroom management and achievement (r = .20, p = .01), but no association between teacher-rated social support and student outcomes (.02 ≤ r ≤ .06). Student-rated classroom management and social support had statistically significant, small to moderate associations with all outcomes at the student level. At the class level, classroom management was moderately linked to truancy (r = –.27, p = .01) and

Table 1
Descriptive Results for Classroom Management, Social Support, and Student Outcomes at the Second Measurement Point as Well as Correlations at the Class Level (Above Diagonal) and the Student Level (Below Diagonal)

	Descriptive statistics				Correlations							
Variable	M	Var_w	Var_b	ICC(1)	1	2	3	4	5	6	7	8
1. Management (T)	2.70		.36			.14*	.49***	.18*	−.22*	.14	.08	.20*
2. Support (T)	3.52		.12				.03	.11	.06	.06	.02	.02
3. Management (St)	2.50	.40	.10	.20				.58***	−.27**	.19*	.14	.03
4. Support (St)	3.07	.41	.13	.24			.39***		−.17	.51***	.55**	−.05
5. Truancy	1.19	.24	.02	.08			−.08***	−.15***		−.24**	.03	−.77***
6. Satisfaction	2.61	.38	.04	.10			.21***	.30***	−.20***		.78***	.08
7. Self-esteem	3.45	.76	.01	.01			.12***	.15***	−.04	.27***		.09
8. Achievement	.43	.69	.30	.30			.08***	.09***	−.10***	.04*	−.01	

Note. St = Student rating; T = teacher rating. Var_w and Var_b refer to the variances within and between classes, respectively, and were used to calculate the intraclass correlation (ICC(1)). All results are based on the manifest scale scores.
* $p < .05$. ** $p < .01$. *** $p < .001$.

school satisfaction ($r = .19$, $p = .03$), whereas there was a strong relationship between social support and self-esteem ($r = .55$, $p = .001$) and school satisfaction ($r = .51$, $p < .001$).

Classroom Management and Social Support as Key Dimensions of Teachers' Interpersonal Behavior

Our first research question aimed to investigate whether the same factorial structure holds for student and teacher ratings at the class level as well as for student ratings at the student level. Results of EFA at the student level implied a two-factor solution (first five eigenvalues: 5.97, 2.39, 0.75, 0.63, 0.54). Items assessing *classroom management* loaded on the first factor ($.51 \leq \lambda \leq .77$), whereas items related to *social support* loaded on the second factor ($.68 \leq \lambda \leq .80$), and cross loadings were small ($.00 \leq |\lambda| \leq .25$). At the class level, where both student and teacher ratings were included, EFA indicated a five-factor solution (first six eigenvalues: 11.10, 4.13, 3.73, 1.71, 1.10, 0.86). As the five-factor model did not converge, we retained a four-factor model. The first factor comprised items measuring *classroom management* from the student perspective. Items measuring *social support* from the teacher perspective had their highest loading on the second factor. The third factor represented teacher-rated *classroom management,* whereas the fourth factor was related to student-rated *social support*. Cross loadings were small for student ratings and below $\lambda = .30$ for all but one teacher-rated item. This item was excluded[2] from all further analyses for both teachers and students to keep items on the classroom management factor parallel. Factor loadings for the EFA at the class level are displayed in Table A1 in the Appendix A.

We next used MCFA to provide further support for a model with two factors at the student level (student-rated *social support* and *classroom management*) and four factors at the class level (student-/teacher-rated *social support* and *classroom management*). The model exhibited acceptable fit ($\chi^2 = 1{,}815.99$, $df = 344$, CFI = .95, TLI = .94, RMSEA = .03, $SRMR_{within} = .06$, $SRMR_{between} = .08$; see M2 in Table 2) that was superior to a model with only one factor at the student level and two factors at the class level in which the first factor comprised all student-rated items and the second factor all teacher-rated items ($\chi^2 = 7{,}826.66$, $df = 350$, CFI = .73, TLI = .69, RMSEA = .06, $SRMR_w = .12$, $SRMR_b = .16$; see M1 in Table 2). As can be seen in Figure 1, correlations between student-rated social support and classroom management were substantial at the student ($r = .43$, $p < .001$) and the class level ($r = .60$, $p < .001$). In contrast, social support and classroom management were only weakly correlated in teacher reports ($r = .12$, $p = .10$).

In a last step, we tested measurement invariance across cohorts as well as cross-level measurement invariance of the student ratings, that is, invariance of the factor loadings across levels (Marsh et al., 2009). Therefore, we constrained the factor loadings to be equal across cohorts or levels of analyses. As the fit indices in Table 2 show, the model fits of the invariant models were similar to the models where the loadings were allowed to vary. Because ΔCFI was less than –.01 in both cases, we assumed that measurement invariance holds for student and teacher ratings across cohorts (see M4 vs. M5, Table 2) and for student ratings across levels (cross-level measurement invariance; see M2 vs. M3, Table 2).

Convergence Between the Teacher and Student Perspectives

Our second research question concerned the extent to which student and teacher ratings of social support and classroom management converged. As the results of the MCFA indicate, student and teacher ratings of social support and classroom management could clearly be separated as distinct factors. Hence, students and teachers perceived perspective-specific aspects. Nonetheless, Figure 1 shows that there was a large latent correlation between student- and teacher-rated classroom management ($r = .47$, $p < .001$). In contrast, the latent correlation for social support was small and not statistically significant ($r = .11$, $p = .19$).

Classroom Management, Social Support, and School Adjustment

The third and central aim of the present study was to investigate the associations between homeroom teachers' social support and classroom management as perceived by students and teachers on the one hand and students' school adjustment on the other hand. The results of our MSEMs are displayed in Table 3; the models showed satisfactory fit (Table 2; M6–M9). We describe results at the student level first and then present findings at the class level.

At the student level, we first see that student characteristics notably contribute to their school adjustment (see Model A). For instance, students with a migration background had higher school satisfaction ($B = 0.09$, $p = .03$) and self-esteem ($B = 0.11$, $p = .02$), but lower achievement ($B = -0.18$, $p < .001$). Moreover, their self-esteem exhibited a more positive development than that of students without a migration background ($B = 0.10$, $p = .02$). Boys reported higher self-esteem ($B = 0.23$, $p < .001$) and truancy ($B = 0.16$, $p < .001$), but lower school satisfaction ($B = -0.27$, $p < .001$) than girls. Whereas boys' self-esteem developed more positively, their school satisfaction, truancy, and achievement levels showed less favorable changes compared to girls. Beyond these background variables, students' individual perceptions of their homeroom teachers' interpersonal behavior were associated with their school adjustment. Social support was statistically significantly related to school satisfaction ($B = 0.28$, $p < .001$), self-esteem ($B = 0.15$, $p < .001$), truancy ($B = -0.15$, $p < .001$), and achievement ($B = 0.07$, $p = .01$). This means that—when comparing students within the same classroom—the students who perceived their teacher to be more supportive had higher achievement, school satisfaction, and self-esteem and were less truant.

To investigate whether social support and classroom management predicted changes in student outcomes, we added students' baseline level of each outcome. As the results from Model B show, social support was associated with students' individual school satisfaction, self-esteem, truancy, and achievement above and beyond their prior school adjustment (school satisfaction: $B = 0.20$, $p < .001$; self-esteem: $B = 0.11$, $p < .001$; truancy: $B = -0.13$, $p < .001$; achievement: $B = 0.05$, $p = .04$). Furthermore, students

[2] The results were similar when this item was included in the analyses. However, the association between teacher-rated classroom management and school satisfaction and student achievement was only marginally significant (see Table S5 in the online supplemental materials).

Table 2
Summary of Fit Indices of Multilevel Confirmatory Factor Analyses (MCFA) and Multilevel Structural Equation Modeling (MSEM)

Model	χ^2 (*df*)	AIC	BIC	CFI	TLI	RMSEA	$SRMR_w$	$SRMR_b$
MCFA								
M1 1 factor (w)/2 factors (b)	7,826.66 (350)	118,711.41	119,492.03	.73	.69	.06	.12	.16
M2 2 factors (w)/4 factors (b)	1,815.99 (344)	112,835.05	113,655.36	.95	.94	.03	.06	.08
M3 Cross-level invariance	1,865.76 (355)	112,877.85	113,625.39	.95	.94	.03	.05	.09
M4 Cohort: no invariance	2,350.71 (704)	112,457.82	113,992.59	.95	.94	.03	.06	.10
M5 Cohort: invariance	2,445.39 (743)	112,476.21	113,752.98	.94	.94	.03	.06	.09
MSEM (Model B)								
M6 Satisfaction	2,210.46 (498)	174,176.353	175,317.02	.94	.93	.03	.04	.08
M7 Self-esteem	2,228.93 (498)	180,823.57	181,964.24	.94	.93	.03	.04	.09
M8 Truancy	2,229.46 (498)	170,477.97	171,618.64	.94	.93	.03	.04	.08
M9 Achievement	1,795.60 (498)	137,328.26	138,417.21	.95	.94	.03	.04	.08

Note. AIC = Akaike information criterion; BIC = Bayesian information criterion; CFI = comparative fit index; TLI = Tucker–Lewis index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; w = within; b = between.

who perceived their classroom to be better organized and calm reported higher self-esteem ($B = 0.07$, $p = .01$) and exhibited more favorable development regarding school satisfaction ($B = 0.07$, $p = .001$) and achievement ($B = 0.05$, $p = .02$) compared to their classmates. However, the standardized coefficients were rather small.

At the class level, background variables were again associated with students' school adjustment: Classes in the second cohort (ninth grade) had lower school satisfaction ($B = -0.22$, $p < .001$) than students in the first cohort (sixth grade). Furthermore, they attained smaller learning gains ($B = -0.40$, $p < .001$) and their truancy ($B = 0.27$, $p < .001$) increased more than among students in the first cohort. Moreover, classes differed depending on school type, and most of these differences became more pronounced over time. Compared to classes in comprehensive schools, classes in the lower track ($B = 0.15$, $p = .002$) and in the intermediate track ($B = 0.12$, $p = .01$) were more satisfied with school. Classes in the intermediate track reported higher self-esteem ($B = 0.14$, $p < .001$), whereas classes in the lower track were more truant ($B = 0.21$, $p < .001$) and learned less ($B = -0.29$, $p < .001$). Social support and classroom management were also linked to general school adjustment at the class level, but the pattern of results differed from that at the student level. For social support, we found that classes that felt more supported by their teachers showed higher school satisfaction ($B = 0.19$, $p = .002$) and self-esteem ($B = 0.11$, $p = .02$). However, the associations were no longer statistically significant when the baseline measurement was included. This means that social support was not related to student outcomes at the class level after controlling for students' prior adjustment. Teacher-rated classroom management was statistically significantly linked to school satisfaction ($B = 0.06$, $p = .03$) in Model A. Furthermore, it was statistically significantly associated with increases in student achievement ($B = 0.05$, $p = .05$). In addition, student-rated classroom management was statistically sig-

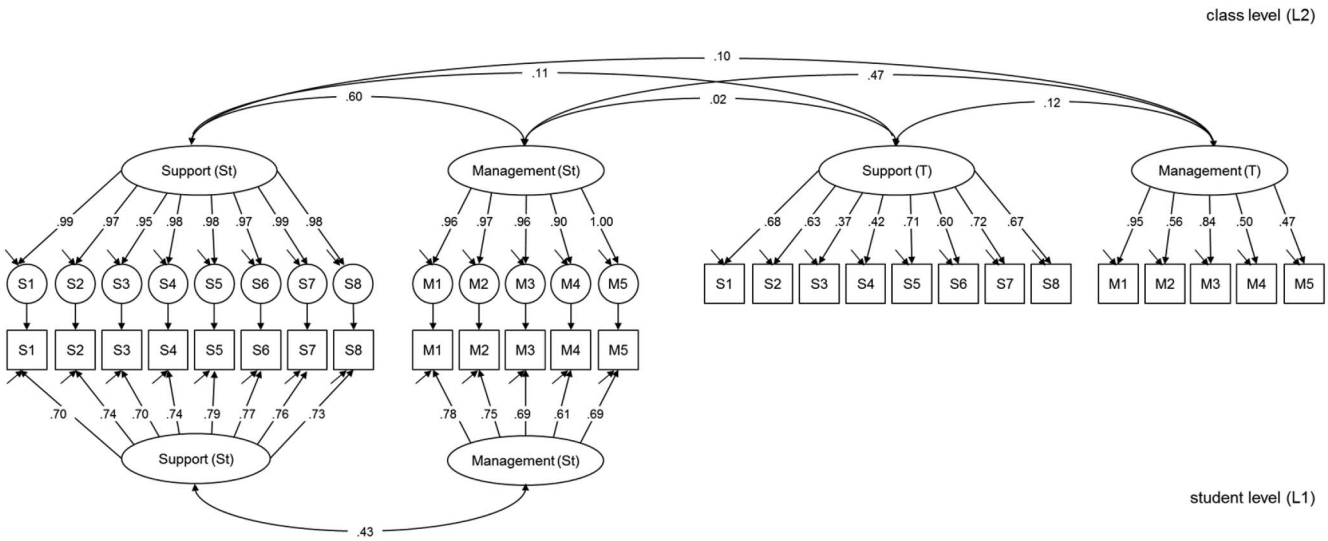

Figure 1. Standardized coefficients and factor intercorrelations for the measurement model with four factors at the class level and two factors at the student level. Correlated residuals for parallel student (St) and teacher (T) items were estimated, but are not displayed to increase clarity. S1–S8 = social support; M1–M5 = classroom management.

Table 3
Prediction of Students' School Adjustment: Results of Multilevel Structural Equation Modeling

	Satisfaction				Self-esteem				Truancy				Achievement			
	Model A		Model B		Model A		Model B		Model A		Model B		Model A		Model B	
Variable	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*
Class level																
Management (St)	−.02	0.08	.04	0.07	−.04	0.06	−.01	0.06	−.14*	0.06	−.13*	0.06	.07	0.10	.08	0.08
Support (St)	.19**	0.06	.10	0.06	.11*	0.05	.07	0.05	−.02	0.06	−.01	0.05	−.08	0.09	−.06	0.07
Management (T)	.06*	0.03	.02	0.02	.01	0.02	.00	0.02	.00	0.03	.00	0.03	.07*	0.03	.05*	0.03
Support (T)	−.01	0.02	.00	0.02	.00	0.02	.00	0.02	.02	0.02	.02	0.02	.01	0.03	.01	0.02
Cohort	−.22***	0.05	−.05	0.04	−.03	0.04	−.04	0.03	.28***	0.05	.27***	0.05	−.73***	0.06	−.40***	0.05
Lower	.25***	0.05	.15**	0.05	.06	0.05	.05	0.04	.26***	0.05	.21***	0.05	−.58***	0.07	−.29***	0.06
Intermediate	.22***	0.05	.12*	0.05	.14**	0.04	.14***	0.04	.06	0.05	.04	0.04	.24**	0.07	.10	0.06
Student level																
Management (St)	.12***	0.02	.07**	0.02	.07**	0.02	.04	0.02	−.03	0.03	−.02	0.03	.06*	0.02	.05*	0.02
Support (St)	.28***	0.02	.20***	0.02	.15***	0.03	.11***	0.03	−.15***	0.03	−.13***	0.03	.07**	0.02	.05*	0.02
Migration	.09*	0.04	.02	0.04	.11*	0.05	.10*	0.04	.04	0.05	.02	0.05	−.18***	0.04	−.03	0.04
Male	−.27***	0.03	−.14***	0.03	.23***	0.03	.17***	0.03	.16***	0.04	.13***	0.03	−.04	0.04	−.06*	0.03
SES	−.01	0.02	−.01	0.01	−.01	0.02	.00	0.02	−.02	0.02	−.01	0.02	.05*	0.02	.03	0.02
Baseline level			.47***	0.02			.38***	0.02			.24***	0.04			.53***	0.02
R^2 Level 1	.13		.32		.04		.17		.03		.08		.02		.30	
R^2 Level 2	.55		.68		.64		.91		.50		.56		.78		.90	

Note. St = student rating; T = teacher rating; SES = socioeconomic status. To control for school type, "lower" and "intermediate" are two dummy variables indicating whether a class is located in the lower track or the intermediate track, with comprehensive schools as the reference category. "Baseline level" refers to the respective outcome at the first measurement point. Coefficients were standardized by the total standard deviation (i.e., continuous predictors: $B \times SD[x]/SD[y]$; dichotomous predictors: $B/SD[y]$; see also Marsh et al., 2012).
* $p < .05$. ** $p < .01$. *** $p < .001$.

nificantly linked to truancy beyond the baseline level ($B = -0.13$, $p = .02$). Hence, classes that were rated by students as well-managed developed more positively in terms of truancy. We also tested whether the pattern of results changed when we included either student or teacher ratings at the class level. The most notable difference was that student-rated classroom management was now statistically significantly associated with changes in student achievement at the class level (see Table S4 in the online supplemental materials).

Finally, we specified multiple group models and used chi-square difference tests (Little, 2013) to assess whether the associations were similar across cohorts. Thereby, we allowed the coefficients of student- and teacher-rated classroom management and social support on the outcome variables to vary freely across cohorts and found the relations to be similar. Furthermore, the findings were robust when we did not assume cross-level invariance of the factor loadings (see Table S3 in the online supplemental materials).

Discussion

The present study investigated whether homeroom teachers' social support and classroom management are related to secondary students' achievement and, beyond that, their domain-independent, general school adjustment in terms of school satisfaction, self-esteem, and truancy. We drew on student and teacher ratings of classroom management and social support and applied MSEMs to simultaneously investigate associations at the student and the class level. In support of our hypotheses, the results showed that classroom management and social support were empirically distinguishable constructs regardless of the level of analysis and whether the student or teacher perspective was being considered. Thereby, student and teacher ratings of social support and classroom management could be clearly separated as distinct factors at the class level. In addition, student and teacher ratings of classroom management were substantially correlated, whereas their perceptions of social support were largely unrelated. Regarding the relationship between social support, classroom management and school adjustment, we found that students' idiosyncratic interpretations of social support were particularly closely linked to their outcomes: Students who felt more supported compared to their classmates developed more positively in terms of school satisfaction, self-esteem, truancy, and achievement. At the class level, relations were more heterogeneous: Student-rated social support was linked to more school satisfaction and self-esteem, and student-rated classroom management was related to lower truancy. Furthermore, teacher-rated classroom management was associated with higher achievement and school satisfaction.

Classroom Management and Social Support as Key Dimensions of Teachers' Interpersonal Behavior

Theoretically and empirically, classroom management and social support represent two central and distinct dimensions of teachers' interpersonal behavior (Hamre et al., 2013; Wubbels, Brekelmans, et al., 1993). However, student and teacher ratings and analyses at the student and the class level have rarely been combined. Therefore, it was unclear whether the same factorial structure would emerge across different levels and perspectives—despite the fact that this is an important precondition of gathering valid findings. Moreover, prior studies were mostly conducted in elementary schools or with mathematics classes (e.g., Downer et al., 2014; Kunter & Baumert, 2006). Therefore, our results complemented these studies and validated the factorial structure across levels and perspectives in a sample of secondary school students.

Convergence Between the Teacher and Student Perspectives

The question of whether different informants generate the same information about teaching processes has often been raised (Desimone, Smith, & Frisvold, 2010; Turner & Meyer, 2000). In this study, students and teachers provided similar information regarding classroom management, but, a meaningful proportion of variance was uniquely tied to each perspective, such that teacher- and student-rated classroom management could be distinguished as two separate factors at the class level. Consequently, students and teachers perceived classroom management somewhat differently, which is an important precondition of perspective-specific validities in predicting student outcomes. In contrast, there appeared to be virtually no relationship between students' and teachers' perceptions of social support. Searching for possible explanations, we noted that all teachers rated their own social support rather positively. This reduction in variance makes it difficult to discover substantial correlations, and this also needs to be considered with respect to the association between teacher-rated support and student outcomes. However, our findings also raise the question of whether teachers and students actually refer to the same underlying construct when rating identical items about teacher social support, and we can only speculate about why their evaluations of social support do not overlap. We assume that student perceptions actually reflect observable differences in whether the teacher responds to students' personal and learning needs. After all, a study that applied student ratings and classroom observations of social support found substantial convergence between student and observer perspectives (Downer et al., 2014). In contrast, teachers may refer to their teaching ideals rather than their actual behaviors (Kopcha & Sullivan, 2007). After all, providing social support to students is particularly closely connected to teachers' identity, because social interests are a major reason for choosing the teaching profession (Roloff Henoch, Klusmann, Lüdtke, & Trautwein, 2015). Therefore, social support may be especially prone to self-serving strategies (Wubbels, Brekelmans, et al., 1993), and it might be harder for teachers to admit having difficulties with social support compared to other aspects of teaching, such as classroom management. Classroom management problems can be ascribed to the class instead of one's own competence (Kulinna, 2007). Moreover, classroom management can be observed more easily than social support, which could facilitate more objective judgments. For instance, successful classroom management can be immediately inferred from the extent of student behavior problems, whereas students' personal and learning needs are less evident to teachers (Kunter & Voss, 2013).

Classroom Management, Social Support, and School Adjustment

The main purpose of the present study was to investigate whether homeroom teachers' classroom management and social support were related to secondary students' general school adjustment. Our findings not only support the numerous stories of teachers who make a difference for students far beyond their specific subject (Pajares & Urdan, 2008), but are also in line with theoretical assumptions that teachers' interpersonal behavior is associated with student development (e.g., self-determination theory; Ryan & Deci, 2000).

Even though our findings largely matched our expectations, there are some interesting results that need further explanation. First, social support was related to positive developments in school satisfaction, self-esteem, truancy, and achievement at the student level, whereas social support was not linked to student outcomes at the class level beyond their baseline adjustment. In contrast, student-rated classroom management was related to changes in truancy at the class level, but associations between students' idiosyncratic interpretations and individual school adjustment were weak. This suggests that differences in students' perceptions of social support within a given class apparently carried valuable information. Students seem to be particularly sensitive to the social support they perceive in comparison to their classmates and it appears to be less important for predicting student outcomes whether the teacher is, on average, more supportive than other teachers. In light of these findings, earlier work on differential teacher behavior and the teacher's pet phenomenon, which indicated that students easily detect subtle nuances in teachers' emotional relationships with different students, appears to be of great interest and should be considered in future research (for an overview see Babad, 2009). However, more research is needed to reveal to what extent students' individual perceptions reflect objective differences in teacher behavior and subjective interpretations.

Importantly, these findings also imply that whether students perceive their classroom to be more or less organized than their classmates is less important for individual student outcomes. Therefore, classroom management rather appears to be a class level construct. At first glance, our finding that teacher-rated, but not student-rated, classroom management was linked to achievement at the class level appears contradictory and is not clearly in line with previous research, which has clearly established a relationship between student-rated classroom management and achievement (e.g., Blank & Shavit, 2016). However, our additional analyses revealed that student-rated classroom management was related to changes in student achievement when teacher ratings were not included in the model (see Table S4 in the online supplemental materials). This supports the argument of perspective-specific validities put forward by Kunter and Baumert (2006). Considering that teacher-rated classroom management was also related to school satisfaction, our results indicate that teachers are indeed able to validly evaluate whether or not they have been able to establish a disciplinary climate where time on task is sufficient to promote learning, which could also be important for students' school satisfaction.

Limitations

The consideration of different perspectives on social support and classroom management and the use of multilevel modeling in investigating their unique relationships with a broad range of student outcomes is a central advantage of the present study. Nonetheless, some limitations need to be discussed. First, we focused on German sixth- and ninth-grade students in the vocational track only. One advantage of this sample was that students remained with the same group of students throughout the school day so that classroom composition was stable. However, whereas

the sampling procedure assured representativeness within the vocational track, our sample was not representative of the total German student population. Therefore, the relationships between social support, classroom management, and student development might vary with different student populations; for example, children in primary school may react differently to their relationship with teachers (Lynch & Cicchetti, 1997; Roorda, Koomen, Spilt, & Oort, 2011). Likewise, our findings may not be transferable to countries where secondary school students do not have a teacher who takes on a role similar to that of German homeroom teachers. However, our study represents a first step toward investigating the proximal processes associated with students' general school adjustment. Research in diverse school systems could reveal whether a certain amount of time or responsibility on behalf of teachers are necessary to attain results similar to those in our study.

Second, we exclusively focused on teachers' interpersonal behaviors. Even though we controlled for relevant covariates, such as gender and migration background, we could not include other possibly relevant features of the classroom environment, such as content-related aspects of teaching or peer relationships. Thus, we cannot rule out that the relations found would change if other classroom environment variables were included.

Third, formulating student and teacher items completely identically was not feasible, and this might have reduced the correlations between the two perspectives. Moreover, caution is warranted in drawing causal inferences, despite the fact that we controlled for students' baseline measures. For instance, it is possible that students who exhibit increased school satisfaction will evoke positive reactions from their teacher and receive more social support (Nurmi & Kiuru, 2015). Relatedly, shared method bias represents a potential threat to the interpretation of our results because students rated both teachers' interpersonal behavior and the outcome variables self-esteem, school satisfaction, and truancy which may have inflated the covariances (Podsakoff et al., 2003). This might be particularly problematic at the student level because rater tendencies such as leniency or acquiescence cannot be accounted for. However, controlling for students' baseline outcomes and conducting analyses at the class level reduced the risk of shared method bias to some extent (Hoyt, 2000). Furthermore, studies applying observer ratings and thus avoiding the problem of shared method bias found observed social support and classroom management to be related to student-rated engagement in class, which implies that our findings are not merely attributable to shared method bias (Reyes, Brackett, Rivers, White, & Salovey, 2012; Rimm-Kaufman, Baroody, Larsen, Curby, & Abry, 2015; Ruzek et al., 2016).

Implications and Conclusion

The present study represented a first step to extending our understanding of the significance of homeroom teachers' social support and classroom management beyond secondary students' domain-specific outcomes. Therefore, we want to caution the reader that more research in diverse contexts is needed to investigate whether our results can be replicated. Our findings imply that there is no clear-cut answer to this question and that considering the perspective of the rater and the level of analysis is of great importance.

Regarding the question of which rater provides the most valid information for predicting student outcomes, our findings supported the usefulness of student ratings. Therefore, recent efforts to improve teacher evaluation using student surveys should be strongly encouraged (Raudenbush & Jean, 2014). In addition, considering teacher ratings of classroom management might also be worthwhile, because the teacher perspective includes specific information that is not detected by students and is uniquely associated with student achievement and school satisfaction. However, teacher ratings of social support were mostly independent of what their students perceived and unrelated to student development. Therefore, researchers must carefully consider whether student and/or teacher ratings are best suited for capturing a given construct of interest. Qualitative interviews or thinking-aloud techniques could be an appropriate tool to more profoundly understand which aspects of social support and classroom management are assessed in student and teacher ratings and why they are differentially related to student outcomes. In addition, integrating observer ratings with student and teacher ratings would further expand our findings on the unique predictive values of different perspectives (Turner & Meyer, 2000).

Moreover, our results indicate that simultaneous analyses at the student and the class level represent an interesting avenue for future research (Lüdtke et al., 2009). Comparisons showed that the associations between social support, classroom management, and school adjustment varied considerably between the two levels: Classroom management largely appeared to be a class level construct, whereas students' individual perceptions had little predictive power. Social support, in contrast, was predictive of students' school adjustment at the student level. This finding is compelling considering the class-level formulation of the items (e.g., "*Our* homeroom teacher tries to understand *us*.") and the fact that we controlled for a number of individual student characteristics that could potentially influence students' ratings (e.g., gender, migration background, baseline level of student outcomes at Time 1). All in all, this challenges the assumption that divergent student perceptions in the same classroom should be conceptualized as pure measurement error or rater bias (Raudenbush & Jean, 2014). Thus, future research would profit from appropriately addressing both the class level and the student level simultaneously. However, more research is also needed to investigate why students in the same classroom perceive social support differently. For example, student characteristics may systematically affect their perceptions: for example, girls might perceive higher levels of social support than boys (Levy, Wubbels, den Brok, & Brekelmans, 2003). Alternatively, these differential perceptions could be rooted in teachers' differential behaviors toward boys and girls (Beaman, Wheldall, & Kemp, 2006). In this regard, classroom observations could help uncover differences in social support displayed toward different students.

Finally, further research is needed to learn more about the relationship between teachers' interpersonal behavior and diverse aspects of students' general school adjustment. For instance, well-being, school engagement, hope and optimism about one's future could be included as additional outcomes because—like self-esteem, school satisfaction, and reduced truancy—they are increasingly emphasized as central goals of schooling (Lopez & Calderon, 2011; Ministry of Education, 2014). Moreover, to promote educational equality, it would be interesting to focus on

at-risk students and investigate the extent to that one teacher can make a difference in their lives (Chetty et al., 2010). After all, these students have been shown to be particularly in need of positive teacher-student relationships, and having at least one trusted adult is considered an important protective factor (McGrath & van Bergen, 2015).

In summary, our results provide new insights for research and practice. This study underlines the association between homeroom teachers' social support and classroom management and secondary students' development not only in the specific subjects they teach, but also with respect to students' general experiences and behavior at school. The use of student and teacher ratings and multilevel structural equation modeling enabled us to discover that the relationships were particularly pronounced for student-rated social support at the student level. Thus, it appears to be crucial for teachers to build positive relationships with every single student because these relationships are associated with student outcomes in corresponding subject domains as well as their general school adjustment.

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(*Appendices follow*)

Appendix A

Student- and Teacher-Rated Classroom Management and Social Support: Items and Results from Exploratory Factor Analyses

Table A1

Items Administered to Students and Teachers to Assess Classroom Management and Social Support as Well as Factor Loadings From Exploratory Factor Analyses at the Class Level

Items	I	II	III	IV
Student items				
In this class, instruction is barely disturbed.	**0.97**	−0.03	−0.01	0.01
In this class, we rarely chatter loudly.	**0.57**	−0.07	0.03	−0.12
In this class, we seldom fool around.	**0.83**	0.05	0.00	0.01
In this class, we listen to our teacher.	**0.74**	−0.01	0.13	−0.03
In this class, we are calm and everything is well ordered.	**0.43**	0.10	0.09	0.09
In this class, we quiet down quickly.	**0.35**	−0.03	0.19	0.28
Our homeroom teacher is interested in every student's learning progress.	−0.03	−0.06	0.02	**0.64**
Our homeroom teacher provides additional support when we need help.	−0.02	−0.06	0.03	**0.62**
Our homeroom teacher stays patient even when we progress slowly.	−0.01	0.03	0.03	**0.36**
Our homeroom teacher encourages us to ask if there is something we do not understand.	−0.08	−0.07	0.23	**0.47**
Our homeroom teacher believes in us.	0.17	0.05	−0.05	**0.69**
Our homeroom teacher has confidence that we will make something good of our lives.	0.21	0.04	−0.27	**0.58**
Our homeroom teacher tries to understand us.	−0.01	0.06	−0.04	**0.68**
Our homeroom teacher is someone we can trust.	−0.03	−0.02	0.02	**0.72**
Teacher items				
In this class, instruction is barely disturbed.	−0.05	0.04	**0.97**	0.02
In this class, students rarely chatter loudly.	0.02	−0.07	**1.01**	−0.02
In this class, students seldom fool around.	0.02	0.02	**0.94**	−0.05
In this class, it is easy to assert myself.	0.05	0.23	**0.83**	0.00
In this class, I am able to establish calm and order.	0.02	0.08	**0.92**	−0.01
In this class, I rarely need to admonish students to ensure calm.[a]	0.05	**0.48**	**0.59**	0.03
I am interested in every student's learning progress.	−0.05	**0.96**	0.07	−0.02
I provide additional support when my students need help.	0.03	**1.01**	−0.07	−0.05
I stay patient even when we progress slowly.	0.00	**0.99**	−0.09	−0.04
I encourage my students to ask at any time if there is something they do not understand.	−0.02	**0.92**	0.11	0.00
I believe in my students.	−0.04	**0.94**	0.07	0.09
I am confident that my students will make something good of their lives.	0.05	**0.93**	0.05	0.05
I show understanding for my students.	0.01	**0.98**	−0.01	0.03
I build trust with my students.	−0.01	**0.99**	−0.02	−0.03

Note. I = student-rated classroom management; II = teacher-rated social support; III = teacher-rated classroom management; IV = student-rated social support; loadings ≥.30 are bold. Results are based on the estimated between-group correlation matrix (see Muthén, 1994).

[a] Item excluded from main analyses.

(*Appendices continue*)

Appendix B

Items That Were Administered to Students to Measure General School Adjustment

School Satisfaction

What applies to you?

School is a place I enjoy being at.

It would be nice if I did not have to go to school anymore. (–)

I enjoy doing my tasks at school.

In the morning I look forward to a day at school to learn something new.

I do my homework as best I can.

Just thinking about school puts me in a bad mood in the morning. (–)

There are only a few things at school for which I put in effort. (–)

Self-Esteem

Last week . . .

I was proud of myself.

I felt on top of the world.

I felt pleased with myself.

I had lots of good ideas.

Truancy

In the current school year, how often have you . . .

skipped certain subjects?

skipped school in the morning or in the afternoon (half a day)?

skipped a single day?

skipped more than two days in a row?

skipped only the first or the last lesson?

skipped a test or exam?

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