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Classroom engagement mediates the effect of teacher–student support on elementary students’ peer acceptance: A prospective analysis

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Abstract

Participants were 360 (52.2% male) ethnically diverse and academically at-risk first-grade children attending one of three school districts in southeast and central Texas. Using latent variable structural equation modeling, we tested a theoretical model positing that the quality of the teacher–student relationship in first grade predicts children’s peer acceptance the following year, controlling for children’s previous externalizing problems and peer acceptance. We also expected that children’s classroom engagement would mediate the effect of teacher–student relationship quality on peer acceptance. The hypothesized model provided a good fit to the data. Engagement fully mediated the effect of teacher support on subsequent peer acceptance. Neither ethnicity nor gender moderated the mediation findings.

Keywords

Teacher student relationship; Peer relationships; Peer acceptance; Classroom participation; Classroom engagement; Elementary students

1. Introduction

It is well established that a positive teacher–student relationship is a developmental asset for children from preschool to high school (Birch & Ladd, 1997; Crosnoe, Johnson & Elder, 2004; Howes, Hamilton, & Matheson, 1994; Ryan, Stiller, & Lynch, 1994; Wentzel, 1998). Students whose relationships with teachers are characterized by greater closeness and less conflict exhibit lower levels of aggression and other conduct problems (Birch & Ladd, 1998; Hughes, Cavell, & Jackson, 1999; Ladd, Birch & Buhs, 1999; Pianta, Steinberg, & Rollins, 1995; Silver, Measelle, Armstrong, & Essex, 2005) are better accepted by classmates (Hughes, Cavell, & Willson, 2001; Ladd et al., 1999), and achieve at higher levels (Birch & Ladd, 1997; Skinner & Belmont, 1993).

Importantly, the quality of teacher–student relationships in the early grades has implications for children’s future academic, social, and behavioral outcomes (Hughes et al., 2001; Ladd et al., 1999; Ladd & Burgess, 2001; Pianta et al., 1995; Pianta & Stuhlman, 2004). For example, Silver et al. (2005) found that conflict in the teacher–child relationship contributed to faster growth in externalizing behavior from kindergarten to third grade, after accounting for children’s negative parenting and kindergarten levels of externalizing problems. Furthermore, among children with high levels of initial aggression, those who were provided greater teacher

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support exhibited the largest declines in aggression across the early school years. Similarly, Birch and Ladd (1998) reported that conflict in the teacher–student relationship predicted decreases in children’s prosocial behavior from kindergarten to first grade. Hamre and Pianta (2001) documented that, controlling for kindergarten entry cognitive ability and problem behavior, teacher-reported negativity in the student–teacher relationship predicted achievement test scores, disciplinary infractions, and school suspensions through eighth grade. Furthermore, the long-term effect of kindergarten teacher–student relationship quality on achievement appeared to be mediated by its effect on achievement in the early elementary grades.

The finding that teacher–student relationship quality has long-term consequences is consistent with a transactional model of school adaptation, which conceptualizes human development as a dynamic interaction between a changing individual and a changing context (Bronfenbrenner, 1979; Sameroff, 1975). The teacher may serve as an attachment figure for young children, such that a secure and close relationship with the teacher enables children to cope better with social and academic challenges in preschool and the early elementary grades (Howes et al., 1994; Pianta & Steinberg, 1992; Sroufe, 1983; van Ijzendoorn, Sagi, & Lambermon, 1992). Children who enjoy supportive relationships with teachers and peers are expected to gain confidence in their abilities and to be more motivated to participate in classroom activities (Birch & Ladd, 1997; Gest, Welsh, & Domitrovich, 2005; Ladd et al., 1999; Skinner & Belmont, 1983). Positive classroom participation, in turn, elicits supportive responses from teachers and classmates and contributes to mastery of new skills (Ladd et al., 1999; Skinner, Zimmer-Gembeck & Connell, 1998). Thus, a child’s social relationships in the classroom, academic motivation, and achievement are viewed as constituting a reciprocal and dynamic process by which children’s early school experiences affect their long-term academic and social adjustment (Perry & Weinstein, 1998).

The hypothesized impact of the quality of the teacher–student relationship on children’s peer relations is supported by correlational studies that report a positive association between teacher–student relationship quality and measures of peer acceptance (Howes et al., 1994; Ladd & Burgess, 2001; Wentzel, 1998). Although the finding of concurrent associations between teacher and peer support is consistent with a causal role for teacher relationship quality on peer support, alternative explanations for the associations are certainly plausible. Because children’s prosocial and antisocial orientations at school predict their levels of both teacher and peer support (Ladd et al., 1999; Ladd & Burgess, 2001), children’s behavioral tendencies may account for the association between teacher and peer support. However, this “third variable” explanation is unlikely to explain all of the covariation between teacher and peer support. In a sample of behaviorally at-risk elementary children, Hughes et al. (2001) found that after controlling for children’s levels of aggression, children who were perceived by their classmates as being more supported by the teacher were better accepted by their classmates.

Prospective, longitudinal studies that investigate changes in peer relations associated with teacher–student relationship quality would provide a stronger basis for inferring a causal role for teacher relationship quality on peer acceptance. It would be especially important to determine whether teacher–student relationships predict changes in children’s peer relatedness across classroom (and peer) contexts. To date, no published study has reported the association between teacher–student relationship quality in a given year and children’s peer acceptance beyond that year. Unless teacher–student support affects a child’s competencies or academic motivation, teacher–student relationship quality may have a short-term impact on peer acceptance that is restricted to a particular year and classroom.

1.1. Developmental consequences of peer relatedness

Establishing the long-term influence of teacher–student relationship quality on peer acceptance is important because children’s peer relationships in the early grades have consequences for children’s short-term and long-term adjustment (For reviews see Bierman, 2004 and Ladd, 1999). For example, Ladd (1990) found that children’s peer relations in kindergarten predicted changes in attitudes toward school, school avoidance, and school performance from early in the school year to the end of the school year. Consistent with a causal role for peer support, additional analyses found that although the quality of peer relations early in the year predicted change in school adjustment, change in peer relations was not predicted by earlier school adjustment. Ladd concluded that “the types of relationships children form with peers in the classroom function as a source of stress or support and shape the course of early school adaptation” (p. 1082). Other researchers have documented the buffering effect of peer support (both friendship and peer acceptance) for children experiencing a range of stressors (Coie et al., 1992; Ladd & Kochenderfer, 1996; Masten & Coatsworth, 1998).

Of the several dimensions of peer relatedness, peer rejection has received the most research attention. Peer rejection in grade school predicts school avoidance, conduct problems, and academic failure during adolescence (Parker & Asher, 1987; Roff, Sells, & Golden, 1972). Peer rejected children are more likely to develop negative self-views and to experience loneliness and depression (Asher, Hymel, & Renshaw, 1984; Asher & Wheeler, 1985; Cassidy & Asher, 1992). Consistent with additive risk models, aggressive children who are also peer-rejected are more likely to remain aggressive than are aggressive children who are not peer-rejected (Bierman & Wargo, 1995).

1.2. Social relatedness and classroom engagement

Recent research on the effects of both teacher support and peer support on children’s school adjustment has focused on the mechanisms responsible for these effects. For example, several researchers have suggested that the concurrent association between teacher–student support and peer support is explained by children’s use of information about teacher–student interactions in forming opinions about a classmate (Birch, 1997; Hughes et al., 2001; Hymel, 1986). According to this view, children are aware of teachers’ differential interactions with students and use this information in forming judgments of children’s competencies and desirability as a friend. In support of this view, even young children are aware of teachers’ differential interactions with students and use this information to make accurate inferences regarding the teachers’ attitudes toward and liking for students (Babad, 1993; Birch, 1997; Brattesani, Weinstein, & Marshall, 1984; Jussim, 1986; Weinstein, Marshall, Sharp, & Botkin, 1987). If classmates form judgments about a child’s characteristics and likeability on the basis of their perceptions of the teacher’s interactions with the child, teacher–student relationship quality may have little influence on how next year’s classmates respond to the child. On the other hand, if teacher support elicits greater self-confidence and positive engagement in the classroom, teacher support may indirectly affect peer relatedness the following year, via its direct effect on child motivation and engagement.

Consistent with motivational theories, children who experience support from teachers and peers feel more comfortable in school, like school more, and participate more actively in classroom activities (Connell & Wellborn, 1991; Furrer & Skinner, 2003; Gest et al., 2005; Goodenow, 1993; Midgley, Feldlaufer, & Eccles, 1989; Marsh, 1989; Ryan et al., 1994; Stipek, 2002). For example, Connell and Wellborn (1991) found that the degree of emotional security experienced by middle school children in their interactions with teachers and classmates had an indirect effect on their achievement via the effect of emotional security on children’s engagement in the classroom, defined in terms of behavioral engagement (working hard, participating in classroom activities, attending to instruction). In a study of children in

grades 3–5, teacher support buffered children with externalizing problems from becoming disaffected with school (Gest et al., 2005). Ladd et al. (1999) reported that the effect of teacher–student conflict in kindergarten on achievement was mediated by the effect of teacher–student conflict on classroom engagement. These researchers defined engagement in terms of compliance with classroom rules and responsibilities and independent, self-directed behavior. In a reciprocal manner, children who are engaged in the classroom elicit supportive responses from both teachers and peers (Skinner & Belmont, 1993; Ladd et al., 1999). The reciprocal nature of engagement and support may explain why classroom engagement is a good predictor of children’s long-term academic achievement (Skinner et al., 1998) and school completion (Connell, Spencer, & Aber, 1994).

Teacher support may be especially important to children’s engagement in the early grades, when children are coping with novel situations and when their independent coping skills are developing. A secure relationship with the teacher may serve as a resource that permits young students to cope more effectively with novel academic and social demands. For example, Little and Kobak (2003) reported that among elementary children, emotional security with the teacher attenuated children’s stress reactivity to negative teacher and peer events in the classroom.

1.3. Study aims

The purpose of this study is to test the hypothesis that teacher–student relationship quality in first grade predicts children’s level of peer acceptance the following year, accounting for children’s baseline level of peer acceptance. Furthermore, we test the hypothesis that classroom engagement mediates the effect of teacher–student relationship quality on future peer acceptance. We test these hypotheses in a culturally and linguistically diverse sample of academically at-risk first grade children. Children were deemed “academically at-risk” on the basis of scoring below their school district median on a measure of literacy given at the beginning of first grade. Children with lower literacy skills are more likely to experience more relational stressors and fewer relational supports than are children with more developed literacy skills at the beginning of first grade (Ladd et al., 1999; Reynolds & Bezruczko, 1993). Thus, these children may be more reliant on teachers to help them cope with academic and social stressors. When provided a supportive teacher presence, these children are expected to cope better with stressors and to participate more actively and appropriately in classroom activities. Because risk factors operate in an interactive manner, such that the effect of additional risks is more than additive (Evans, 2004; Sameroff, Seifer, Baldwin, & Baldwin, 1993), children with low entry literacy skills who subsequently experience low levels of teacher and peer support are expected to be at greatly increased risk for poor school adaptation. For these reasons, students with low literacy skills represent a population of considerable importance with respect to the influence of teacher support on children’s future school engagement and peer acceptance.

Some researchers have reported that the effect of teacher–student relationship quality on children’s school adjustment is moderated by child gender and ethnicity. For example, Burchinal, Peisner-Feinberg, Pianta, and Howes (2002) found that supportive student–teacher relationships were more predictive of growth in reading between preschool and second grade for African American than for White students. Similarly, among aggressive children, teacher support was more predictive of deflections from aggression for minority than majority elementary school children (Meehan, Hughes, & Cavell, 2003). Hamre and Pianta (2001) found that boys and girls benefit differently from different aspects of the teacher–student relationship, such that the effect of relational support may show up later for girls than for boys. Thus, we investigate whether our results are moderated by gender or ethnicity.

2. Methods

2.1. Participants

Participants were 415 (52.2% male) first-grade children attending one of three school districts (1 urban, 2 small city) in southeast and central Texas, drawn from a larger sample ($N=784$) of children participating in a longitudinal study examining the impact of grade retention on academic achievement. Participants were recruited across two sequential cohorts in first-grade during the fall of 2001 and 2002. Children were eligible to participate in the longitudinal study if they scored below the median score on a state approved district-administered measure of literacy administered in either in May of kindergarten or September of 1st grade and had not been previously retained in first grade. Of 1374 children who were eligible to participate in the study, written parental consent was obtained for 784 (57%). Children with and without consent to participate did not differ on age, gender, ethnicity, economically disadvantaged status, or literacy test scores. More children with consent were classified as limited English Proficiency (23.4%) than children without consent (14.5%).

A total of 360 participants had complete data for all study variables for year 1 and year 2. Children with and without complete data did not differ on any demographic variables or study variables at baseline with the exception of teacher-rated conflict. Children with complete data had lower year 1 teacher conflict scores ($M=1.79$, $SD=.98$) than did children with incomplete data ($M=1.96$, $SD=1.04$). At entrance to first grade, children's mean age was 6.57 ($SD=.35$) years. Children's intelligence as measured with the Universal Nonverbal Intelligence Test (Bracken & McCallum, 1998) was 93.57 ($SD=.60$). Based on family income, 59.7% of participants were eligible for free or reduced lunch. For 34.2%, the highest educational level in the household was a high school certificate or below. These 360 children were located in 115 first grade classrooms. Given the attrition rate, we test our model a second time using imputed data, to increase the generalization of our findings to the original sample.

2.2. Measures

In March of year 1 and year 2, teachers were mailed a questionnaire packet for each study participant. This packet included the measures of the teacher's perception of student-teacher support and conflict and of the student's engagement in class. Teachers received compensation for completing and returning the questionnaires. Peer sociometric data were obtained via individual interviews conducted between February and May of each year.

2.3. Teacher-student support

The 22-item Teacher Relationship Inventory (TRI; Hughes et al., 2001) is based on the Network of Relationships Inventory (NRI; Buhrmester & Furman, 1987), a child-report measure of relationship quality. Items were modified so that teachers report on their relationships with students. Teachers indicate on a 5-point Likert-type scale their level of support (16 items) or conflict (6 items) in their relationships with individual students. Example Support scale items include "I enjoy being with this child"; "This child gives me many opportunities to praise him or her"; "I find I am able to nurture this child"; and "This child talks to me about things he/she doesn't want others to know." Example Conflict scale items include "I often need to punish this child" and "this child and I often argue and get upset with each other". In our sample, internal consistency reliabilities (alphas) were .92 for Support and .94 for Conflict. In a sample of 2nd and 3rd grade children, the TRI Support scale correlated moderately with teachers' reports of student-teacher relational conflict ($r=-.56$) and with peer nominations of student-teacher relationship support ($r=.53$) (Hughes, Yoon, & Cavell, 1999, April). In a longitudinal study of behaviorally at-risk elementary students, the Teacher Support scale scores predicted changes in behavioral adjustment and peer relationships (Meehan et al., 2003).

2.4. Classroom engagement

This teacher-report, 10-item scale is comprised of 8 items from the Conscientious scale of the Big Five Inventory (BFI; John & Srivastava, 1999) and 2 items taken from the Social Competence Scale (Conduct Problems Prevention Research Group, 2004) that were consistent with our definition of classroom engagement (effort, attention, persistence, and cooperative participation in learning). Although the BFI is conceptualized as a measure of personality traits, the selected items from the Conscientious scale are similar to items used by other researchers to assess classroom engagement (Ladd et al., 1999). We conceptualize our measure of engagement as reflecting a dynamic interaction between dispositions the child brings to the classroom and experiences in the classroom. Example items are “Is a reliable worker”, “Perseveres until the task is finished”, “Tends to be lazy” (reverse scored), and “Is easily distracted”. The two items from the Social Competence Scale were “Sets and works toward goals” and “Turns in homework”. The internal consistency of these 10 items for our sample was .95.

2.5. Teacher ratings of conduct problems

Teachers completed the Strengths and Difficulties Questionnaire (Goodman, 1997), a brief (25-item) screening measure for psychopathology. Each item is rated on a 0–2 scale (i.e., not true, somewhat true, certainly true). The SDQ yields five scales (conduct problems, hyperactivity, emotional problems, peer problems, and prosocial), each consisting of 5 items, and a total problems scale, comprised of items on the four problem scales. The total problems scale is predictive of psychiatric “caseness” (Goodman, 1997). Results of confirmatory factor analysis supports the five-factor structure of the SDQ (Hill & Hughes, 2005). The mean items score on the Conduct Problems scale was used in this study.

2.6. Peer sociometric scores

A modified version of the Class Play (Masten, Morison, & Pelligrini, 1985) was used to obtain classmates’ evaluations of children’s social behaviors. Research assistants individually interviewed children at school. Children were asked to nominate as few or as many classmates as they wished who could best play each of several parts in a class play. Of interest to this study are two item assessing *aggression* (“Some kids start fights, say mean things, or hit others” and *trouble-making* (“Some kids get into trouble a lot.”). Following each item, students were asked, “What kids in your class are like that?” Each classmate received an aggression and trouble score based on the number of nominations that child receives for that item. Sociometric scores were standardized within classrooms.

During the sociometric interview, children were also asked to name all the children in their classrooms whom they “liked the most”. Children also were asked to indicate their liking for each child in the classroom on a 5-point scale. Specifically, the interviewer named each child in the classroom and asked the child to point to one of five faces ranging from sad (1=don’t like at all) to happy (5=like very much). To avoid asking children to nominate disliked children, a rating of “1” was considered equivalent to a “liked least” nomination score (Asher & Dodge, 1986). Following Coie, Dodge, and Coppotelli (1982), social preference scores were computed as the standardized liked most nomination score minus the standardized liked least scores. All sociometric scores were standardized within classrooms.

Elementary children’s peer nomination scores derived from procedures similar to those used in this study have been found to be stable over periods from six weeks to four years and to be associated with concurrent and future behavior and adjustment (for review, see Hughes, 1990). Because reliable and valid sociometric data can be collected using the unlimited nomination approach when as few as 40% of children in a classroom participate (Terry, 1999), sociometric scores were computed only for children located in classrooms in which

more than 40% of classmates participated in the sociometric assessment. The mean rate of classmate participation in sociometric administrations was .65 (range .40 to .95), and the median number of children in a classroom providing ratings was 12. Although only children with written parent consent provided ratings and nominations, all children in the class were rated and eligible for nomination. Thus children's *z*-scores were standardized based on scores for all children in the classroom.

3. Results

The hypothesized model is shown in Fig. 1. The bolded arrows indicate the targeted mediation effect where time 1 teacher support was hypothesized to effect time 2 teacher-perceived engagement which, in turn, influenced time 2 peer acceptance. There were a total of 360 participants with complete data on the manifest variables appearing in Fig. 1. Table 1 presents the correlations among all manifest variables in the hypothesized model. The hypothesized structural model was examined by using maximum likelihood estimation with robust standard errors and a mean-adjusted chi-square statistic test (MLR; Muthén & Muthén, 2004). To account for the dependency among the observations (students) within clusters (classrooms), analyses were conducted using the "complex analysis" feature in Mplus (v.3.12, Muthén & Muthén, 2004); this accounts for the nested structure of the data by adjusting the standard errors of the estimated coefficients.

According to Baron and Kenny (1986), the first step in testing the mediation effect is to establish a significant direct effect, or, the significant relationship between the predictor and the outcome variable. In our case, teacher support was a significant predictor on peer acceptance measured in the following year ($\hat{\gamma}_{\text{standardized}} = .24$; $p < .05$), after controlling for the previous peer acceptance measure.

The second and third steps of the Baron and Kenny's (1986) procedure of testing mediation effect are to establish a significant relationship between the predictor and mediator and a significant relation between the mediator and the outcome, respectively. However, the overall model fit of the original hypothesized mediation model as shown in Fig. 1 was not fully satisfactory ($\chi^2(37) = 272.08$, $p < .001$; CFI = .85; RMSEA = .133; SRMR = .061). To improve the overall model fit, the model has been modified by adding three paths of correlating residual variances between: (1) peer-nominations of trouble and peer nominations of aggressive at Time 1; (2) teacher-rated conduct problems and teacher-rated conflict at Time 1; and (3) peer-rated liking at Time 1 and peer-rated liking at Time 2. The pattern and the significance of the coefficients were very similar between the original model and modified model; all coefficients were significant in the same direction and the changes of the standardized path coefficients were within .10. Because adding the extraneous parameters did not in any way change the substantive interpretations of the model, the modifications were deemed appropriate (Bentler, 2000, September 2). The modified mediation model as shown in Fig. 2 fit the data well ($\chi^2(34) = 99.27$, $p < .001$; CFI = .96; RMSEA = .073; SRMR = .042). All coefficients except the residual variance of teacher support were significant at $p < .05$. We also analyzed this model with imputed data (i.e., $N = 764$) and found very similar results (i.e., coefficients presented in the parentheses in Fig. 2). In testing the second step for mediation effect, we found that teacher support measured at Time 1 had a significant impact on engagement measured in the following year, after controlling for previous engagement ($\hat{\alpha}_{\text{standardized}} = .25$; $\hat{\alpha}_{\text{non-standardized}} = .35$; $SE_{\hat{\alpha}} = .10$; $p < .05$). We also found that teacher-perceived engagement had a significant positive effect on peer acceptance after controlling for previous year peer acceptance ($\hat{\beta}_{\text{standardized}} = .27$; $\hat{\beta}_{\text{non-standardized}} = .22$; $SE_{\hat{\beta}} = .05$; $p < .05$) when testing the third step for mediation effect. The final step of Baron and Kenny's (1986) procedure involves testing whether the relation between the predictor (i.e., teacher support at Time 1) and outcome variable (i.e., peer acceptance at Time 2) is substantially reduced when the mediator variable (i.e., teacher-

perceived engagement) is included in the model. A significant reduction suggests that the mediator partially or fully explains the relation between the predictor and outcome. As shown in Fig. 2, the effect of teacher support on peer acceptance controlling for teacher-perceived engagement was not significant, ($\hat{\gamma}_{\text{standardized}} = .13; p > .05$), indicating a full mediated effect of teacher-perceived engagement. A similar result was also found from the imputed data.

Another way to test the mediated effect is to examine the product of estimates multiplying the *non-standardized* path coefficients from Baron and Kenny's the second and the third steps. To account for the dependency among the observations, Sobel's (1982) test of mediation effects

(i.e., $Z_{\alpha\beta} = \frac{\hat{\alpha}\hat{\beta}}{SE_{\hat{\alpha}\hat{\beta}}}$) along with the first order Taylor series derived standard error (i.e., $SE_{\hat{\alpha}\hat{\beta}} = \sqrt{\hat{\alpha}^2 * (SE_{\hat{\beta}})^2 + \hat{\beta}^2 * (SE_{\hat{\alpha}})^2}$) was employed (Krull & MacKinnon, 1999, 2001). Sobel's test result also supported the significant mediation of our interest. That is, teacher-perceived engagement significantly and completely mediated the short term relation between teacher support and peer acceptance ($Z_{\alpha\beta} = 2.74; p < .05$).

Moreover, we examined the possible gender and ethnic differences on the mediation effect of teacher-perceived engagement based on the modified model. Due to the use of robust estimator, Satorra–Bentler adjusted Chi-square difference test (Satorra, 2000) was adopted to examine the possible group difference on the mediation effects. None of the adjusted chi-square difference test was significant, indicating that the mediation effect of engagement on the relation between teacher support and peer acceptance was invariant across different gender and ethnic groups.

3.1. Discussion

This study is the first to document that teacher–student relationship quality predicts children's sociometric peer acceptance the following year, controlling for children's baseline (first grade) externalizing problems and peer acceptance. Several methodological features of this study increase confidence in the study's findings and conclusions, including the large sample size, replication of findings with observed and imputed data, and the use of latent constructs for measures of teacher–student relationship quality and peer acceptance. Unlike other studies that have examined associations between teacher support, peer acceptance, and classroom engagement, this study used different sources (first grade teacher, next year's teacher, next year's classmates) to assess these constructs. Thus, the associations cannot be explained by shared method variance.

Importantly, the direct effect of first grade teacher support on peer acceptance the following year is completely mediated by the second year teachers' ratings of student engagement. Thus, these findings are consistent with motivational explanations of the long-term impact of teacher–student relationship quality in the early grades. As children make the transition to formal learning in first grade, the provision of a supportive teacher enables children to focus on classroom learning activities and to cope more competently with social and academic challenges. As children enter new classrooms with new teachers and classmates (on average, only 17% of a child's classmates in year 2 were classmates the previous year), those children who involve themselves constructively in classroom activities enjoy greater peer support. Thus, early supportive relationships elicit greater engagement in learning and improved peer relatedness, both of which have been shown to forecast positive academic and social trajectories.

Consistent with previous findings (Ladd, 1990; Ladd et al., 1999; Pianta et al., 1995), early elementary children with high externalizing problems are least likely to enjoy supportive relationships with teachers and peers. However, previous research suggests that children with

high levels of externalizing behaviors are the very children who are most likely to benefit from a supportive relationship with their teachers, in terms of decreases in aggressive behaviors (Silver et al., 2005). Thus, it is critical to find ways of helping teachers connect with children enter school with poorly regulated and aggressive behaviors.

We found no evidence for gender or ethnic moderation in the effects of interest. Thus, the benefits of a supportive teacher–student relationship accrue equally to boys and girls and to ethnic/racial majority and minority children. Differences between our study and those of Meehan et al. (2003) and Burchinal et al. (2002), which found ethnic moderation, may be a result of differences in sampling strategy and in dependent variables. Meehan et al. (2003) selected for high levels of aggression and assessed the effect of teacher support on aggression, and Burchinal et al. (2002) assessed the effect of teacher support on academic achievement in a non-select sample.

Although our theoretical model posits a causal role for teacher–student support on children’s engagement and peer acceptance, we believe the associations among teacher–student support, child positive engagement in the classroom, and peer acceptance reflect bidirectional and reciprocal causation. For example, children who are dispositionally conscientious, positive, and well-regulated are likely to be regarded by teachers as engaged and to elicit supportive responses from teachers and peers. Because we modeled the effect of child characteristics on peer acceptance and engagement at time 1 and tested for the prospective association of teacher support in one year on peer acceptance and engagement the following year, controlling for year 1 peer acceptance and engagement, our data offers strong but not conclusive support for a causal role for teacher support on subsequent peer acceptance. A stronger test of our theoretical model would involve three waves of data. This way, one can test, for example, if teacher support at the initial assessment predicts children’s engagement at the second assessment (controlling for engagement at assessment 1), which in turn would predict peer acceptance at wave 3 (see Cole & Maxwell, 2003, for a thorough discussion of this analytic strategy).

Because participants for this study were selected on the basis of scoring below their school district median on a school-administered measure of literacy, these findings may not generalize to a sample more representative of literacy levels among first grade students. Indeed, because low achieving students are likely to struggle more in meeting the academic demands of the classroom, they may be particularly responsive to variations in the provision of teacher relational support (or conflict). Our findings suggest that early teacher support for these children enable them to invest themselves in learning and to succeed socially, paving the way to continued academic and social success.

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Fig. 1.

Hypothesized model. T-conduct (Teacher rated conduct problems); P-trouble (Peer nomination for trouble); P-agg (Peer nomination for aggression); T-conflict (Teacher rated conflict); T-Support (Teacher support); P-liking1 (Peer rated liking at time 1); P-prefer1 (Social preference at Time 1); P-liking2 (Peer rated liking at Time 2); P-prefer2 (Social preference at Time 2); T-eng1 (Teacher rated engagement at Time 1); T-eng2 (Teacher rated engagement at Time 2). *T-conduct: reverse coded with higher score indicates lower teacher-rated conduct problems. *P-trouble: reverse coded with higher score indicates lower peer nominations for troubles. *P-agg: reverse coded with higher score indicates lower peer-nominations for aggression. *T-conflict: reverse coded with higher score indicates lower conflict.

Fig. 2.

The mediation effect of engagement on the short term effect between teacher rated support and peer acceptance. $\chi^2(34)=99.27, p<.001$; CFI=.96; RMSEA=.073; SRMR=.042. Except the **bolded** coefficients, all coefficients are significant at $p<.05$ (two-tailed). All coefficients are standardized ($N=360$); coefficients in parentheses are based on imputation results ($N=764$); all coefficients are significant at $p<.05$ except the ones associated with dashed paths.

Table 1

Zero-order correlations for all variables

Scale	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. T-conduct *	–										
2. P-trouble *	.56	–									
3. P-agg *	.47	.73	–								
4. T-conflict *	.78	.56	.46	–							
5. T-support	.60	.35	.27	.57	–						
6. P-liking1	.35	.40	.35	.29	.39	–					
7. P-prefer1	.31	.41	.33	.26	.30	.69	–				
8. P-liking2	.31	.28	.28	.33	.29	.48	.36	–			
9. P-prefer2	.32	.31	.28	.31	.24	.39	.40	.73	–		
10. T-eng1	.50	.47	.32	.48	.55	.41	.36	.36	.38	–	
11. T-eng2	.42	.43	.30	.39	.40	.34	.37	.38	.44	.63	–

Note. $N=360$. T-conduct (Teacher rated conduct problems); P-trouble (Peer nominations for trouble); P-agg (Peer nomination for aggression); T-conflict (Teacher rated conflict); T-support (Teacher rated support); P-liking1 (Peer rated liking at time 1); P-prefer1 (social preference at time 1); P-liking2 (Peer rated liking at Time 2); P-prefer2 (social preference at Time 2); T-eng1 (Teacher rated engagement at Time 1); T-eng2 (Teacher rated engagement at Time 2). T-conduct, P-trouble, P-agg, and T-conflict are reverse-coded. All correlations are significant at $p<.001$ (two-tailed).

* T-conduct, P-trouble, P-agg, and T-conflict are reverse coded.