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Article *in* Teaching and Teacher Education · April 2017

DOI: 10.1016/j.tate.2017.01.012

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Research paper

School-wide practices associated with school climate in elementary, middle, and high schools

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HIGHLIGHTS

- Large sample of 30,071 students in grades 3–12.
- Praise and rewards for good behavior and teaching social and emotional competencies related positively with school climate.
- Punitive consequences related negatively associated with school climate.
- Effects of teaching social and emotional competencies were nearly twice that of the use of praise and rewards.
- At the student level, effects of teaching social and emotional competencies were nearly twice that of punitive consequences.

ARTICLE INFO

Article history:
Received 3 October 2016
Received in revised form
6 January 2017
Accepted 14 January 2017

1. Introduction

To one extent or another, praise and rewards, punitive consequences, and the teaching of social and emotional competencies are found in nearly all schools to achieve the two primary aims of classroom management and school discipline (Bear, 2015): (1) to manage student behavior and maintain student engagement and cooperation, and (2) to develop social and emotional competencies that characterize *self-discipline* (also often referred to as self-regulation, self-management, self-control, and responsible behavior). Those two aims are interrelated, with both serving to prevent behavior problems. Because schools differ in which aim is most valued and in the approaches they adopt to achieve it, schools vary in the degree of emphasis placed on each of those practices. That is, whereas some schools rely primarily on punitive consequences to manage student behavior, others rely primarily on praise and rewards to achieve the same aim. Others rely on a variety of additional practices for teaching social and emotional competencies, with the primary aim of developing self-discipline. Some schools make equal use of all three practices to achieve both aims.

The purpose of the present study is to examine the extent to which students' perceptions of the use of praise and rewards, punitive consequences, and the teaching of social and emotional (referred to herein as *management practices*) are related to their perceptions of school climate.[1] We examine the relations between school climate and these three practices across elementary, middle, and high school in hopes that the findings will provide educators of all grade levels with greater understanding of the use of how three common management practices might impact school climate.

2. Importance of school climate

Researchers have defined, conceptualized, and measured school climate in different ways (Zullig, Koopman, Patton, & Ubbes, 2010). However, most would concur that it refers to the "quality and character of school life" that includes "norms, values, and expectations that support people feeling socially, emotionally, and physically safe," as defined by Cohen, McCabe, Michelli, and Pickeral (2009, p. 182). School climate is not a new topic of educational research (see Anderson, 1982 for a review), but in recent years it has garnered increased interest among researchers and educators. This is seen in a number of studies relating students'

[1] Technically, punishment decreases the occurrence of a behavior and positive reinforcement increases it (Alberto & Troutman, 2006). Because negative, or punitive, consequences (e.g., suspension) often do not lead to actual decreases in behavior and praise and rewards do not always lead to actual increases, the authors do not use the terms punishment and positive reinforcement in this article.

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http://dx.doi.org/10.1016/j.tate.2017.01.012

perceptions of a positive school climate to multiple valued outcomes, including greater student academic achievement (Bear et al., 2011; Jia et al., 2009), sense of belonging to school (Waters, Cross, & Runions, 2009) and life satisfaction (Suldo, Thalji-Raitano, Hasemeyer, Gelley, & Hoy, 2013); and less aggression (Elsaesser, Gorman-Smith, & Henry, 2013; Wilson, 2004), bullying (Low, Van Ryzin, Brown, Smith, & Haggerty, 2014), anxiety (Rigby, 2000), and depression (Loukas, Suzuki, & Horton, 2006).

In light of research linking school climate to the outcomes above, improving school climate is often a goal of school-based programs designed to promote children's social, emotional, and academic development and prevent behavior problems (Adelman & Taylor, 2010). What generally is lacking in research—especially at the school level—are studies that indicate which educational practices and techniques are related to school climate and might best be targeted for improving it. Although a large number of studies have linked classroom management and school discipline practices to students' academic and social outcomes (e.g., Gregory et al., 2010; Wentzel, 2002), there is a dearth of studies in which school climate is the measured valued outcome.

3. Review of related literature

Few studies have examined how school climate is related to the school-wide use of praise and rewards, punitive consequences, and the teaching of social and emotional competencies. However, ample research supports each practice for achieving either or both of the educational aims noted previously. In the following sections, we discuss such research briefly, while surmising how each practice may be related to students' perceptions of school climate. This is followed by a summary of the aims of the study, the study's methods, the results, and a discussion of our findings and their implications.

3.1. Use of praise and rewards for managing student behavior

Teachers' use of praise and rewards, which is typically intended to provide positive feedback to students or to recognize and reinforce desired behaviors, can be found in nearly all classrooms and schools. For example, over 90% of classroom teachers report using rewards on a daily or weekly basis (Social and Character Development Research Consortium, 2010).

3.1.1. Are praise and rewards effective?

In support of their widespread use, multiple reviews of the research literature have concluded that praise and rewards are generally effective in improving student behavior (Akin-Little & Little, 2009; Brophy, 1981; Cameron & Pierce, 1994; Cerasoli, Nicklin, & Ford, 2014; Landrum & Kauffman, 2006). However, their limitations also are often noted, including that students within and across age groups may differ in their preferences and responses to praise and rewards and that tangible rewards may harm intrinsic motivation under certain conditions, such as when used in a controlling manner and when social comparisons are highlighted (Deci, Koestner, & Ryan, 1999, Deci, Koestner, & Ryan, 2001; Brophy, 1981; Emmer, 1988).

In light of their general effectiveness, praise and rewards for good behavior are found in nearly all approaches to classroom management and school discipline (although other terms are often used, such as encouragement). For example, the frequent and systematic use of praise and rewards for desired targeted behaviors is typically a defining feature of behaviorally-oriented approaches to school discipline and classroom management, such as the popular School-Wide Positive Behavioral Interventions and Supports (SWPBIS) approach (Sugai & Horner, 2009). Within this approach, praise, rewards, and other forms of intended positive reinforcement are emphasized in order to "systematically teach rule-following behaviors within each school routine and setting" (Simonsen & Sugai, 2009, p. 136) and therefore manage student behavior. Although not a defining feature, and used in a less frequent and systematic manner, praise and rewards for good behavior also are found in the popular Social and Emotional Learning (SEL; CASEL, 2012) approach to school discipline, as we describe later.

3.1.2. Predicted relationship with school climate

Given that praise and rewards are generally effective in increasing desired behaviors and preventing behavior problems (Landrum & Kauffman, 2006), a positive relationship between students' perceptions of the frequency of their teachers' and school's use praise and rewards for good behavior and students' perceptions of school climate should be expected, as we predict in the current study. This is supported by a recent study in which Mitchell and Bradshaw (2013) examined the relationship between school climate and the use of positive behavior supports (PBS). The latter consisted of having "in place" an assortment of twelve practices of classroom management, including an emphasis on use of praise and rewards for good behavior. The study showed a positive correlation between students' general perceptions of school climate and their teachers' combined use of the twelve PBS classroom management practices.

3.2. Use of punitive consequences for managing student behavior

Punitive consequences are intended to cease or decrease undesired student behavior, and range from a verbal reprimand or a teacher's unpleasant facial expression to harsher practices, such as yelling at students or removing them from the classroom or school (e.g., in-school or out-of-school suspension). Codes of conduct, which are mandated in many if not all states in the United States of America, typically emphasize a range of punitive consequences intended to match the severity of the misbehavior. An emphasis on the use of punitive consequences, and especially suspension from school and without consideration of the circumstances surrounding the student's behavior, is a defining feature of the zero tolerance approach to school discipline (American Psychological Association Zero Tolerance Task Force, 2008).

3.2.1. Are punitive consequences effective?

Another reason why punitive consequences are found in all schools is because they *are* generally effective in achieving the short-term aim of managing student behavior. By often serving as punishment, they stop or decrease undesired behavior (Landrum & Kauffman, 2006), and through the process of modeling they also often serve as deterrents of future misbehavior (Bandura, 1986). Indeed, research shows that the most effective teachers and schools establish and impose clear rules and fair consequences for violating them (Bear, 2015; Brophy, 1996). At the school level, clear behavioral expectations and fair rules and consequences also are found to be a primary characteristic of a positive school climate (Gottfredson, 2001; Mayer & Leone, 1999). It is when students view punitive consequences as used too frequently or unfairly (e.g., imposed without consideration of circumstances or are too harsh) that they are likely to view school discipline, as well as overall school climate, unfavorably (Arum, 2003).

Despite their effectiveness, the limitations of punitive consequences are widely known. Among them are that the effects often are only short-lived and are likely to produce undesirable side effects among students, such as anger, retaliation, dislike toward the teacher or school, and social withdrawal (Bear, 2010).

3.2.2. Predicted relationship with school climate

Given their limitations, one might predict that students' perceptions of the frequent use of punitive consequences would relate negatively to their perceptions of overall school climate. However, in the previously mentioned study by Mitchell and Bradshaw (2013), the frequency of use of office disciplinary referrals (ODRs)—the one punitive practice examined—was shown to be associated negatively with students' perceptions of only one of four aspects of school climate assessed: order and discipline. ODRs were not related to the other three aspects of school climate assessed (fairness, student-teacher relationships, and achievement motivation). As described later, in the present study we do not limit punitive consequences to the use of ODRs, but include additional types of punitive consequences as well as punishment in general. We predict that punitive consequences relate negatively to students' perceptions of school climate.

3.3. Teaching social and emotional competencies to manage student behavior (and develop self-discipline)

Most teachers and schools employ practices other than praise, rewards, and punitive consequences to manage student behavior. This is particularly true for teachers and schools that aim to develop students' social-emotional competencies (Social and Character Development Research Consortium, 2010). According to the Collaborative for Academic, Social, and Emotional Learning (CASEL, 2012), five domains of social-emotional competency are typically targeted: responsible decision making, relationship skills, self-management, social awareness, and self-awareness [see CASEL (2012) for reviews of these skills and SEL programs]. Efforts to develop these competencies often occur through formal SEL curricula that directly teach social-emotional skills to students. Although formal SEL curricula are fairly common in schools, there are many other methods and practices that teachers and schools use to develop students' social-emotional competencies (Zins, Bloodworth, Weissberg, & Walberg, 2004). For example, SEL is often integrated throughout lessons in the existing curriculum (e.g., social studies, literacy, and health) and developed within the ongoing context of daily interactions between teachers and students such as in class meetings and discussions, disciplinary encounters, and cooperative learning activities. SEL also is developed in service learning, student government, sports, and extracurricular activities (Jones & Bouffard, 2012; Yoder, 2014; Zins et al., 2004). Typically, a combination of those methods and practices is found in schools, making it difficult to determine if one is more effective than the other.

3.3.1. Is it effective?

Despite the wide range of methods and practices for promoting SEL, research has primarily investigated the effects of formal lesson-based SEL programs and has not examined more informal and general ways in which SEL competencies are promoted. Although the scope of previous research is quite narrow, studies suggest that the use of formal SEL programs is associated with more positive student perceptions of classroom and school climate (Brock, Nishida, Chiong, Grimm, & Rimm- Kaufman, 2008; Brown, Low, Smith, & Haggerty, 2011), more positive observer ratings of classroom climate (Upshur, Wenz-Gross, & Reed, 2013), greater student-rated school bonding (Kumpfer, Alvarado, Tait, & Turner, 2002), and more positive attitudes about school (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011).

3.3.2. Predicted relationship with school climate

What is less known, however, is whether students perceive school climate more favorably when they perceive greater efforts by teachers and staff to teach social and emotional competencies. Thus, in this study we explore the extent to which students' perceptions of their school's teaching of social and emotional competencies, in general and irrespective of method(s) used, are related to their perceptions of school climate. Because the multiple practices used within formal SEL programs and during more informal interactions are fairly similar in nature (i.e., targeting and teaching the same social-emotional competencies), and given the numerous studies cited above suggesting the connection between formal SEL programs and school climate, we expect to find a positive relationship between students' perceptions of the frequency of the teaching of social and emotional competencies and their perceptions of a positive school climate.

3.4. Summary of the aims of the study

In summary, we predict that whereas students' perceptions of the frequency of the use of praise and rewards for good behavior and the teaching of social and emotional competencies relate positively to school climate, students' perceptions of the frequency of punitive consequences relate negatively. In examining those relationships, we include students in grades 3–12, while controlling statistically for the effects of grade level. This is done in light of research indicating that elementary students tend to view school climate more favorably than middle and high school students (Bear, Gaskins, Blank, & Chen, 2011). We also control statistically for students' race/ethnicity and gender. Previous research has found that Caucasian and female students tend to view school climate more favorably than students of other races/ethnicities and males (Fan, Williams, & Corkin, 2011; Mitchell, Bradshaw, & Leaf, 2010). Finally, we explore if grade level moderates the strength of the relationship between the three different types of management practices and school climate. That is, we examine if the relationships between students' perceptions of behavior management practices and school climate differ as a function of grade level.

We should note that the study was not intended to investigate the association of school climate with particular school-wide approaches that emphasize the use of praise and rewards, punitive consequences, and the teaching of social and emotional competencies, such as the SWPBIS, zero tolerance, and SEL approaches, respectively. Instead, we explore common practices of classroom management and school discipline found to one degree or another in nearly all schools. As we describe in the procedures section, the majority of schools in the study had previously received training in integrating the SWPBIS and SEL approaches. Moreover, each school also had a code of conduct that spelled out punitive consequences for violations of rules. Our purpose was not to evaluate the effectiveness of these trainings or the implementation fidelity of practices taught, but instead to examine the extent to which differences in students' perceptions of the use of three common management practices relate to students' perceptions of school climate. Because it is likely that participation in trainings and fidelity of implementation varied greatly between schools, the schools provided an excellent context for the purposes of the study.

4. Method

4.1. Students and schools

The study included 30,071 students, grades 3–12, from 118 public schools in the state of Delaware in the United States: 15,065 students from 78 elementary schools (serving kindergarden–grade 5), 8798 from 23 middle schools (grades 6–8), and 6208 from 17 high schools (grades 9–12). These students and schools were part of a larger survey of school climate, management practices,

engagement, bullying victimization, and social and emotional competences conducted annually by the Delaware Department of Education. That survey includes two validity items used to screen out students who respond randomly to items, admit not responding truthfully, and do not (or cannot) read the items. Those two items are "I am telling the truth in this survey" and "I answered all items truthfully on this survey." Students who fail to respond "Agree" or "Strongly Agree" to both items are not included in the state's survey, and thus are not included in the current study (the exact number deleted is unknown, but typically includes about seven percent of students (Authors, 2016).

According to students' self-reported demographic information, 48.9% of students in the current study were male and 51.1% female; 46.6% Caucasian, 26.0% African American, 13.3% Hispanic/Latino, 3.8% Asian, and 10.3% Multi-racial.[2] Comparing the racial/ethnic group composition to those reported by the Delaware Department of Education (DDOE), the percentages for racial/ethnic groups were largely consistent with the overall percentages in the state at the time of the study (3.6% Asian, 15.3% Hispanic/Latino, and 46.6% Caucasian). However, African American students were slightly underrepresented (26.0% vs. 31.2%) and Multi-racial students were overrepresented (10.3% vs. 2.8%). This discrepancy can at least partly be attributed to different individuals reporting racial/ethnic group data. Students reported their race/ethnicity in the current study, but their parents/guardians reported the students' race/ethnicity in the data from the DDOE.

School-level information, used as covariates in the statistical analyses, was provided by the DDOE. It included the number of students enrolled (school size), grade level (elementary, middle, high school), and the percentage of students eligible for receiving free or reduced price meals (FRPM). For the 78 elementary schools, school size ranged from 233 to 859 students (mean = 505), and the percentage of students eligible to receive FRPM ranged from 3.8% to 86.5% (mean = 45.2%). For the 23 middle schools, school size ranged from 427 to 1130 students (mean = 789) and the percentage of students eligible to receive FRPM ranged from 7.2% to 78.2% (mean = 37.1%). Finally, for the 17 high schools, school size ranged from 502 to 1801 students (mean = 1025) and the percentage of students eligible to receive FRPM ranged from 9.6% to 44.8% (mean = 30.5%).

School participation was voluntary but strongly encouraged by the DDOE, with 69% of public elementary, middle, and high schools in the state participating. As an incentive for participation, each school was provided a comprehensive report of its scores. At the time of the study, 86 of 118 of the schools included in the study had participated in training provided statewide by the DDOE on integrating strategies and techniques of the SWPBIS approach (Sugai & Horner, 2009) with those of the SEL approach (Durlak, Domitrovich, Weissberg, & Gullotta, 2015). Such integration is not uncommon (Bear, Whitcomb, Elias, & Blank, 2015). Primary goals of those trainings were to improve school climate and reduce school suspensions. In addition to the frequent and systematic use of praise and rewards and additional practices for developing SEL skills, the schools also used punitive consequences as seen in state-mandated Codes of Conduct delineating school rules and their punitive consequences. Moreover, consistent with a zero tolerance approach, in many schools suspension was widely used as a punitive consequence, as reflected in Delaware being ranked fifth in the nation for the number of suspensions for students without disabilities in years shortly preceding the study (Office for Civil Rights, 2010). As noted earlier, this combination of practices commonly associated with the SWPBIS, SEL, and zero tolerance approaches served the purposes of the study quite well—providing a setting in which schools likely varied not only in the frequent use of praise and rewards and the teaching of social and emotional competencies, but also in the use of punitive consequences.

[2] Due to low sample sizes, American Indian/Alaskan Native (1.9% of original sample) and Hawaiian students (0.3% of original sample) were deleted from the study.

4.2. Measures

As we describe below, for purposes of the current study, students completed two scales assessing their perceptions of school climate and of their teachers' use of praise and rewards, punitive consequences, and the teaching of social and emotional competencies.

4.2.1. School climate

Students completed the 2015 revision of the Delaware School Climate Survey-Student (DSCS-S; Bear et al., 2016), which consists of subscales assessing teacher-student relationships, student-student relationships, fairness of rules, clarity of expectations, school safety, school-wide engagement, and school-wide bullying. Each subscale has 3–5 items. Students respond using a 4-point Likert scale, with 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Agree*, and 4 = *Strongly Agree*. Evidence of reliability and validity of scores for the 2015 revision version can be found in the instrument's technical manual (Bear et al., 2016), and published peer-reviewed journals (Bear et al., 2011). This includes results of confirmatory factor analyses supporting a second-order model consisting of seven lower-order factors and a higher-order factor of school climate and demonstrating measurement invariance across grade levels (elementary, middle, and high school), racial/ethnic groups, and gender. In the current study, the total score of the DSCS-S was used, consisting of the sum of scores across all subscales divided by the total number of items (n = 31). Alpha coefficients for total scores were .86 for elementary students, .90 for middle school students, and .90 for high school students.

4.2.2. Praise and rewards, punitive consequences, and the teaching of social and emotional competencies

Students completed the 2015 revision of the Delaware Positive, Punitive, and SEL Techniques Scale (DTS-S) (Bear et al., 2016) to assess their perceptions of the extent to which praise and rewards, punitive consequences, and the teaching of social and emotional competencies were used in their school to manage student behavior and develop self-discipline. The scale consists of three subscales. The use of positive behavioral techniques subscale (PRAISE) consists of five items, with a focus on the frequency of the school-wide use of praise and rewards: (1) "Students are praised often." (2) "Students are often given rewards for being good." (3) "Teachers often let students know when they are being good." (4) "Classes get rewards for good behavior." and (5) "Teachers use just enough praise and rewards; not too much or too little." The use of punitive techniques subscale (PUNI) consists of five items assessing the frequency of specific and general actions by adults intended to decrease or punish undesired behavior: (1) "Many students are sent to the office for breaking rules." (2) "Students are punished too much for minor things." (3) "Students are punished a lot." (4) "Students are often sent out of class for breaking rules." and (5) "Students are often yelled at by adults." Finally, the use of social emotional learning techniques subscale (TSEC) consists of six items, including five that align with CASEL's five social and emotional competencies: (1) "Students are taught to feel responsible for how they act." (2) "Students are taught they should care about how others feel." (3) "Students are taught to understand how others think and feel." (4) "Students are taught that they can control their

own behavior." and (5) "Students are taught how to solve conflicts with others." A sixth item taps fostering students' autonomy ("Students are often asked to help decide what is best for the class or school."), which is emphasized in many SEL programs and highly related to responsible decision making. As with the DSCS-S, students respond using a 4-point Likert scale, with 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Agree*, and 4 = *Strongly Agree*. A total score for each subscale was calculated by dividing the sum score of the subscale's items by its total number of items.

Confirmatory factor analyses, conducted on a larger sample that included students in the present study, supported the scale's three factors, yielding good fit indices for the three factor model and measurement invariance across grade levels (elementary, middle, and high school), racial/ethnic groups, and gender. Those results are presented in the instrument's technical manual (Bear et al., 2016). In the current study, for the positive, punitive, and teaching social and emotional competencies subscales, respectively, alpha coefficients were .73, .75, and .76 for elementary students; .82, .72, and .80 for middle school students; and .85, .71, and .81 for high school students.

4.3. Procedures

Students completed both the DSCS-S and DTS-S in either their classrooms or a school computer lab, with their teachers or other school staff administering the survey. As noted previously, these two scales were part of an annual survey conducted by the DDOE, which included three additional scales (but only two for grades 3–5). The survey was completed either online, using Qualtrics software, or via a paper Scantron version. Teachers/staff were provided with a script to read to students when completing the survey, which included assuring students of confidentiality (neither names nor identification numbers were used). The two scales in the current study consisted of a total of 47 items, taking 10–15 min to complete (and 20–30 min for the entire survey), depending on grade level. Because items on the two measures are written with an overall readability of 3.4 (based on the Flesch–Kincaid readability formula; Kincaid, Fishburne, Rogers, & Chissom, 1975), teachers/staff were encouraged to read items aloud in classes at the lower grades (e.g., grades three and four). To protect teachers from identification, no method was used to identify teachers or classrooms.

Items also asked students to identify their grade, race ("White," "Black," "Hispanic/Latino," "Asian," or "Multi-racial"), and gender. All surveys were given between late February and early April. Schools' survey completion rates (i.e., the number of students in a school who were included in the final sample divided by the number of students, grades 4–12, who were enrolled in a given school during the 2014–2015 school year) ranged from 12.4% to 87.8% (mean = 40.1%; median = 39.4%; average number of respondents per school = 255). All measures and procedures were approved by the DDOE and the Institutional Review Board of the researchers' university.

4.4. Statistical analyses

We used multilevel analyses to examine effects at both the student and school levels. This was done not only to take into account that students are nested within schools, and thus to examine the effects of both student-level (e.g., gender and race/ethnicity) and school-level variables (e.g., school size), but also because it is debatable whether school climate is best viewed at the individual student level or the school level. That is, several researchers have emphasized that school climate is a school-level variable given that it represents the overall quality of the school (Marsh et al., 2012; Wang et al., 2014). However, others have noted that school climate also should be examined at the student level given that students can have diverse perceptions of the climate within a single school and individual differences in perceptions of school climate are often associated with important outcomes (Kuperminc, Leadbeater, Emmons, & Blatt, 1997).

Before conducting the multilevel analyses, student-reported scores on each of the four measures were first aggregated at the school level to generate school means (i.e., $PRAISE_{school\ mean}$, $PUNI_{school\ meanl}$,. $TSEC_{school\ mean}$, and $School\ Climate_{school\ mean}$). Two centering approaches were then applied to the independent variables to minimize the threat of multicollinearity and to improve the interpretation of the results in the multilevel analysis (Raudenbush & Bryk, 2002). First, group mean (school mean) centering was applied to the student reported scores to generate student-level variables (i.e., $PRAISE_{student\ level}$, $PUNI_{student\ level}$,. $TSEC_{student\ level}$, and $School\ Climate_{studentl\ level}$). Second, grand mean centering was applied to the aggregated school means of each of the four measures and the school-reported scores of school size and percentage of FRPM to generate school-level variables (i.e., $PRAISE_{school\ level}$, $PUNI_{school\ level}$,. $TSEC_{school\ level}$, $School\ Climate_{school\ level}$, $School\ Size_{school\ level}$, and $FRPM_{school\ level}$).

When conducting the multilevel analyses, we first examined three sets of correlations among variables based on (a) the student-reported scores, (b) the group-mean centered student-level scores, and (c) the school mean scores. This was followed by seven hierarchical linear regression models. The models were specified sequentially using HLM 7.0 to examine the main effects of the three types of school management practices (i.e., praise and rewards, punitive consequences, and the teaching of social and emotional competencies) and covariates (i.e., grade level, gender, race/ethnicity, FRPM, and school size) on school climate and the moderating effects of grade level in the associations between the three practices and school climate.

Next, we multiplied the three types of school-level management practices with two dummy coded variables representing grade level to generate six school-level interaction terms: $PRAISE_{school\ level} \times GradeLevel\_D1$, $PUNI_{school\ level} \times GradeLevel\_D1$, $TSEC_{school\ level} \times GradeLevel\_D1$, $PRAISE_{school\ level} \times GradeLevel\_D2$, $PUNI_{school\ level} \times GradeLevel\_D2$, $TSEC_{school\ level} \times GradeLevel\_D2$. An unconditional model (Model 1) with school climate as the outcome variable and no predictors was first specified to estimate the intraclass correlation coefficient (ICC). The ICC was used to represent the proportion of variance in school climate explained at both the student and school levels and to determine if multilevel analysis was appropriate. In Model 2, demographic factors were added as predictors at the student level (i.e., gender and race/ethnicity) and school level (i.e., grade level, school size, and percentage of students receiving FRPM) to examine the concurrent main effects of student and school demographic factors on school climate. Categorical variables (i.e., gender, race/ethnicity, grade level) were dummy coded. In Models 3–5, student-level and school-level demographic factors were kept in the model as predictors to control statistically for student and school demographic effects. The three types of management practices, both at the student and school levels, were added sequentially to examine their multilevel main effects. Thus, the variable punitive consequences was added in Model 3, praise and rewards in Model 4, and teaching of social and emotional competencies in Model 5. The proportions of change in variance in school climate explained by the addition of each practice, at the student and school levels, were examined to determine if each of the three practices accounted for variance beyond that explained by the other two practices and by the demographic variables.

In Model 6, the six school-level moderation terms, as described

previously, were added as predictors at the school level to examine the moderating effects of grade level in the association between school-level management practices and school climate. In Model 7, the two dummy coded variables of grade level (i.e., GradeLevel_D1 and GradeLevel_D2) were added as predictors to the student-level regression slope between each type of school management practices and school climate. This was to create six cross-level moderation terms (i.e., $PRAISE_{student\ level} \times$ GradeLevel_D1, $PUNI_{student\ level} \times$ GradeLevel_D1, SEL $_{student\ level} \times$ GradeLevel_D1, $PRAISE_{student\ level} \times$ GradeLevel_D2, $PUNI_{student\ level} \times$ GradeLevel_D2, SEC $_{student\ level} \times$ GradeLevel_D2).

In conducting analyses of the seven models, we calculated effect sizes of student- and school-level predictors to examine the magnitude and practical importance of the main effects and moderating effects (Lee, Loeb, & Lubeck, 1998). The magnitude of effect sizes for main effects was determined using the criteria suggested by Cohen (1988). As such, for comparing mean differences across grade levels, effects of .80 standard deviation or more in magnitude were viewed as large, .50 to .80 as moderate, .20 to .50 as small, and below .20 as trivial. For the main effects, .02, .15, and .35 were used as the cut-off values to determine small, medium, and large effect sizes. The criteria suggested by Aguinis, Beaty, Boik, and Pierce (2005) were used to determine the magnitude of effect sizes of moderation effects. Thus, .005, .01, and .025, respectively, were used as the minimal criterion in classifying effect sizes as small, medium, and large. When the seven models were estimated in HLM 7.0, listwise deletion was performed for missing data based on the variables included in the seven models.

5. Results

5.1. Results of descriptive and correlational analyses

Table 2 presents the means (*M*s) and standard deviations (*SD*s) of the variables and their correlations. As shown in Table 1, based on the student reported observed scores, students' perceptions of the use of praise and rewards, punitive consequences, and teaching social and emotional competencies correlated .63, -.48, and .67, respectively, with their perceptions of school climate. Coefficients were lower based on computed student-level scores, with students' perceptions of the use of praise and rewards, punitive consequences, and teaching social and emotional competencies correlating .53, -.39, and .61, respectively, with their perceptions of school climate. Coefficients were higher based on school-level scores, with students' perceptions of the use of praise and rewards, punitive consequences, and teaching social and emotional competencies correlating .85, -.83, and .90, respectively, with their perceptions of school climate. As also shown in Table 1, school size and FRPM correlated significantly with all other variables, with the exception of the correlation between school climate and FRPM.

5.2. Results of HLM analyses

5.2.1. ICC and school effects

Model 1 of the HLM analyses revealed an ICC value of .2567, indicating that 25.67% of the variance in students' perceptions of school climate could be explained by factors at the school level, leaving 74.33% accounted for at the student level. Results of Model 1 also show that significant variance in school climate was explained by school groupings [$\chi^2(117) = 9423.45$, $p < 0.001$], supporting the use of multilevel analyses (Lee et al., 1998).

5.2.2. Main effects of demographic factors

Results of Model 2, presented in Table 2, show the effects of student-level and school-level demographics. As shown, perceived school climate scores were not significantly different between males and females. With respect to race/ethnicity, African American students had significantly lower school climate scores than Caucasian students, Hispanic/Latino students, and Asian students. Effect sizes were in the moderate range. School climate perceptions did not differ significantly between African American and Multi-racial students. Among all racial/ethnic groups, Asian students perceived school climate most favorably; African American students and Multi-racial students perceived it the least favorably.

Students' perceptions of school climate were most favorable in elementary schools and least favorable in high schools. Whereas the effect size of the difference between elementary and middle schools was large (*ES* = 1.57), the effect size of the difference between high and middle schools was small (*ES* = -.43). As shown earlier in correlation coefficients, school size was not statistically related to school climate. Finally, a school's percentage of students receiving FRPM was statistically related to school climate, but the effect size was trivial.

5.2.3. Main effects of management practices

As shown in Table 3, results of Models 3–5 reveal that when praise and rewards, punitive consequences, and teaching social and emotional competencies were added sequentially as predictors of school climate, at both the student and school levels, each practice accounted for statistically significant additional variance beyond that explained by the variables added previously. The overall proportion of change in school climate variance explained by the school-level predictors was larger than the overall proportion of change in school climate variance explained by the student-level predictors. For example, when we added punitive consequences as a predictor in Model 3, the proportion of variance explained increased by 16.47% at the student level and 59.06% at the school level. As shown in Table 4, the effect sizes of the main effects of the three practices on school climate were consistently large at both the student and school levels.[3] Particularly noteworthy is that at both the student and school levels the effect sizes for teaching social and emotional competencies was approximately twice that of praise and rewards. Likewise, at the student level the effect size of teaching social and emotional competencies was nearly twice that of punitive consequences. At the school level the effect sizes was similar for punitive consequences and teaching social and emotional competencies, with both being appreciably higher than for praise and rewards.

5.2.4. Moderating effects of grade level

As shown in Table 4, upon controlling for student and school demographic factors, we found statistically significant moderating effects, with large effect sizes, at the student level but not the school level. Those effects were found for praise and rewards and punitive consequences but not for teaching of social and emotional competencies. As illustrated in Fig. 1, whereas secondary students' perceptions of school climate tended to be more favorable with higher perceived use of rewards and praise, this trend was much stronger in middle school than high school. Moreover, there were no differences between these two grade levels when students perceived the least praise and rewards.

With respect to grade level moderating the effects of punitive consequences, we found statistically significant differences, with

[3] Results of the main effects of demographic factors and management techniques were similar across Models 2–7. Model 6 served as a transitional model for examining the moderating effects of grade levels. Thus, only the results of the main effects of management techniques and the moderating effects of grade levels in Model 7 are were presented in the results section.

Table 1
Descriptive statistics of the continuous variables at the student and school level.

Variables	M	SD	Correlational relationships					
			1	2	3	4	5	6
Student-reported variables								
1. Praise and rewards	2.84	0.68	1					
2. Punitive consequences	2.51	0.64	−.23***	1				
3. Teaching social and emotional competencies	3.00	0.57	.68***	−.23***	1			
4. School climate	2.95	0.47	.63***	−.48***	.67***			
Student-level variables based group-mean centered scores								
1. Praise and rewards	0.00	0.57	1					
2. Punitive consequences	0.00	0.60	−.14***	1				
3. Teaching social and emotional competencies	0.00	0.53	.63***	−.15***	1			
4. School climate	0.00	0.41	.53***	−.39***	.61***	1		
School-level variables based on aggregated school mean scores								
1. Praise and rewards	2.95	0.37	1					
2. Punitive consequences	2.48	0.25	−.52***	1				
3. Teaching social and emotional competencies	3.06	0.22	.92***	−.64***	1			
4. School Size	635.20	272.20	−.73***	.25**	−.67*	1		
5. Percentage of students Receiving free or reduced-price lunch	41.49	18.09	.38***	.39***	.18*	−.48***	1	
6. School Climate	3.01	0.23	.85***	−.83***	.90***	−.55***	−.03	1

Note. M = Mean, SD = Standard Deviation.
Student sample sizes ranged from 26,745 to 29,612; school sample size N = 118.
***p < .001; **p < .01; *p < .05.

Table 2
Multilevel main effects of student-level and school-level demographic factors on school climate in model 2.

	Coefficient	*SE*	*P* Value	*ES*[a]
Intercept of school climate	3.02	0.01	<.001	–
Student-level main effects				
Gender[b]				
Male vs. female student	−0.01	0.01	.120	−0.03
Race[b]				
Caucasian vs. African American	0.09	0.01	<.001	0.23
Hispanic vs. African American	0.08	0.01	<.001	0.20
Asian vs. African American	0.13	0.02	<.001	0.33
Multi-racial vs. African American	0.01	0.01	.415	0.03
School-level main effects				
Grade Level[b]				
Elementary vs. middle schools	0.36	0.03	<.001	1.57
High vs. middle schools	−0.10	0.04	.004	−0.43
School size	0.00	0.00	.215	0.00
Percentage of students receiving FRPM	0.00	0.00	<.001	0.00

Note. SE = standard error; *ES* = effect size.
[a] At the student level, the effect size of the main effect was calculated by dividing the main effect coefficient by 0.40, which was the student-level standard deviation of the random effect estimate in the unconditional model (Model 1). At the school level, the effect size of the main effect was calculated by dividing the coefficient by 0.23, which was the school-level standard deviation of the random effect estimate in the unconditional model (Model 1).
[b] The main effects of the gender, race, and grade levels refer to the differences between the two compared groups. The comparison reference group for gender effect was male students; the comparison reference group for race/ethnicity effect was African American students; and the comparison reference group for grade level effect was middle school students. When examining the gender, race, and grade-level effects, the group with the lowest mean scores was choose as the comparison reference group to make the comparisons more straightforward.

large effect sizes, between elementary and middle schools and between high schools and middle schools. Across all three grade levels, perceptions of school climate were less favorable with increasing perceptions of the frequency of punitive consequences. However, this negative association was stronger in middle school than elementary school and high school. As illustrated in Fig. 2, compared to elementary students, middle school students perceived school climate more favorably when the use of punitive consequences was perceived to be very low, but less favorably as punitive consequences were perceived as used more often. As illustrated in Fig. 3, the negative association between punitive consequences and school climate was stronger in middle school compared to high school, with grade-level differences in school climate being greatest under conditions of low use of punitive consequences. However, unlike the differences in school climate between middle school and elementary school students, middle school students tended to have more positive climate perceptions than high school students irrespective of the level of punitive consequences.

6. Discussion

Our primary aim was to investigate the association between students' perceptions of school climate and their perceptions of the frequency of school-wide use of praise and rewards for good behavior, use of punitive consequences, and the teaching of social and emotional competencies. We also examined the effects of student- and school-level demographic factors and the moderating effect of grade level. In the sections below we discuss our findings and their implications, beginning with differences in perceptions of school climate as a function of the demographic factors examined. Next, we discuss the findings and their implications pertaining to each of the three types of management practices, including the extent to which grade level moderates the relationships between students' perceived use of each practice and school climate.

6.1. Role of student- and school-level demographic factors

With regard to racial/ethnic differences, Asian students reported the most positive perceptions of school climate, whereas African American and Multi-racial students reported the least favorable perceptions. Other studies also have reported that African American students tend to have less favorable perceptions of school climate (Kuperminc et al., 1997; Watkins & Aber, 2009). We found no significant differences between male and female students. Whereas studies have tended to report more favorable perceptions of school climate among females, (e.g., Fan et al., 2011; Koth, Bradshaw, & Leaf, 2008; Verkuyten & Thijs, 2002), others have reported the opposite (e.g., Mitchell, Bradshaw, & Leaf, 2010). When gender differences are found, the effect sizes tend to be very small.

In exploring the association between school-level demographic factors and school climate, we found that school size was unrelated

Table 3
Proportion of variance explained by the addition of predictors at the student and school levels for models 1-5.

	Model 1	Model 2	Model 3	Model 4	Model 5
Added predictors at both student and school levels	–	Demographic factors	Punitive consequences	Praise and rewards	Teaching of social and emotional competencies
Student-level variance component estimate (σ^2)	0.16	0.16	0.13	0.09	0.08
School-level variance components estimate (τ^{00})	0.06	0.01	0.00	0.00	0.00
Proportion of variance explained at student level by the addition of predictor(s)[a]	–	2.27%	16.47%	27.05%	17.56%
Proportion of variance explained at school level by the addition of predictor(s)[b]	–	80.24%	59.06%	28.09%	24.69%

Note. When the proportion of variance explained was calculated, the previous model (i.e., the model specified in the previous hierarchical step before the new predictors were added), not the null model, was chosen as the comparison model.
[a] Proportion of Variance Explained at Student Level by the Addition of Predictor(s) = $(\sigma^2_{\text{previous model}} - \sigma^2_{\text{current model}})/\sigma^2_{\text{previous model}}$.
[b] Proportion of Variance Explained at School Level by the Addition of Predictor(s) = $(\tau^{00}_{\text{previous model}} - \tau^{00}_{\text{current model}})/\tau^{00}_{\text{previous model}}$.

Table 4
Statistical estimates of multilevel main effects of management techniques and moderating effects of grade levels in the association between management techniques and school climate.

School Climate	Coefficient	*SE*	*p* value	*ES*[a]
	2.99	0.01	<0.001	–
Effects with focal predictors at student level				
Association between praise and rewards (student level) and school climate				
Main Effect	0.16	0.00	<0.001	0.40
Grade-level difference (moderation effect)[b]				
Elementary vs. middle school	0.01	0.01	0.369	0.01
High vs. middle school	−0.05	0.01	<0.001	−0.07
Association between punitive consequences (student level) and school climate				
Main Effect	−0.19	0.00	<0.001	−0.48
Grade-level difference				
Elementary vs. middle school	0.03	0.01	0.003	0.04
High vs. middle school	0.03	0.01	0.014	0.05
Association between teaching of social and emotional competencies (student level) and school climate				
Main effect	0.32	0.01	<0.001	0.80
Grade-level difference				
Elementary vs. middle school	0.02	0.01	0.163	0.02
High vs. middle school	0.02	0.01	0.170	0.02
Effects with focal predictors at school level				
Association between praise and rewards (school level) and school climate				
Main effect	0.18	0.06	0.003	0.78
Grade-level difference				
Elementary vs. middle school	0.01	0.12	0.933	0.02
High vs. middle school	−0.08	0.14	0.567	−0.12
Association between punitive consequences (school level) and school climate				
Main effect	−0.35	0.04	<0.001	−1.50
Grade-level difference				
Elementary vs. middle school	0.08	0.09	0.386	0.19
High vs. middle school	0.03	0.14	0.842	0.07
Association between teaching social and emotional competencies (school level) and school climate				
Main effect	0.36	0.06	<0.001	1.55
Grade-level difference				
Elementary vs. middle school	0.16	0.13	0.224	0.27
High vs. middle school	−0.14	0.16	0.389	−0.23

Note. SE = standard error; *ES* = effect size.
[a] At the student level, the effect size of the main effect was calculated by dividing the main effect coefficient by 0.40, which was the student-level standard deviation of the random effect estimate in the unconditional model (Model 1). At the school level, the effect size of the main effect was calculated by dividing the coefficient by 0.23, which was the school-level standard deviation of the random effect estimate in the unconditional model (Model 1). At both levels, effect size of moderation effect is calculated by dividing the moderation effect coefficient by the standard deviation of the slope, which is calculated by multiplying the standard error of the corresponding moderator's main effect by the square root of the sample size (Lee et al., 1998).
[b] The moderation effect of grade levels refer to the grade level differences between the two compared groups in the association between each types of management techniques and school climate. The comparison reference group for grade level effect was middle schools.

to school climate. We also found that the percentage of students receiving FRPM was significantly and negatively associated with school climate. Both of these findings are supported by a study of students' sense of community in school, which showed school size to be a nonsignificant predictor and school-level SES to be a significant positive predictor (Vieno, Perkins, Smith, & Santinello, 2005). Consistent with previous research (Bear et al., 2011; Wang & Dishion, 2012), we found a more positive school climate in elementary school than in middle and high school.

6.2. Role of praise and rewards

As predicted, we found a positive relationship between students' perceptions of the frequency of use of praise and rewards for good behavior and their perceptions of school climate. At both the student and school levels, students' perceptions of use of praise and

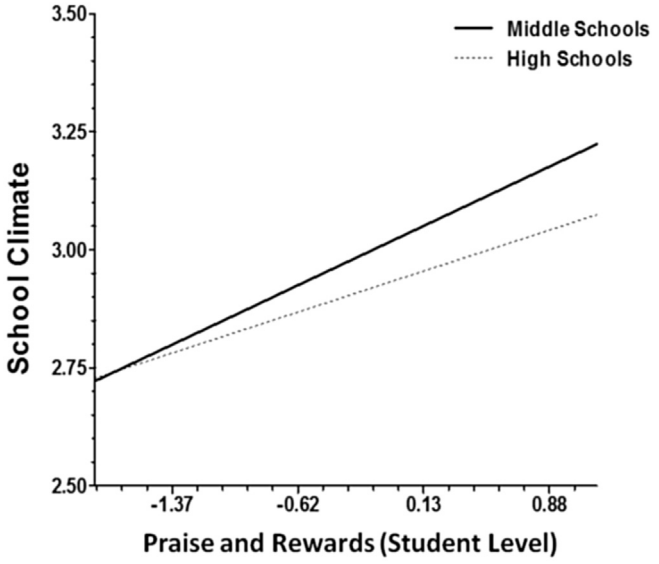

Fig. 1. Differences between middle school and high school students in the association between praise and rewards for good behavior and school climate.

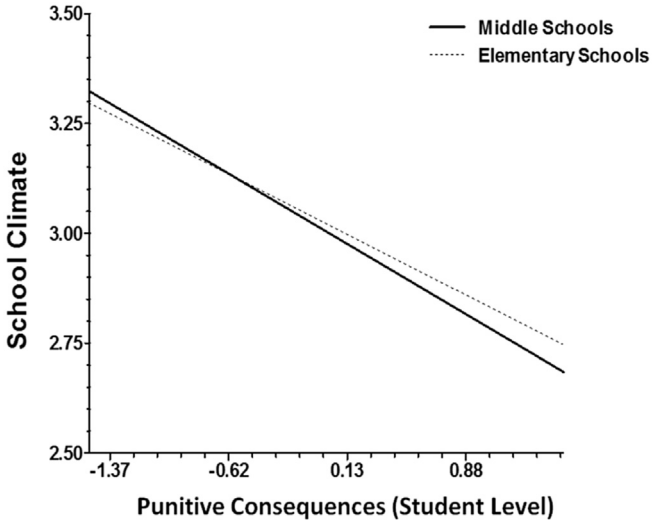

Fig. 2. Differences between elementary and middle school students in the association between punitive consequences and school climate.

rewards were associated with perceptions of a more positive school climate. These findings are consistent with those of Mitchell and Bradshaw (2013), who found that the use of positive classroom management practices relate positively to students' perceptions of school climate. Our findings extend their results, however, by including a more diverse sample of students beyond elementary school (i.e., grades 3–12 instead of only grade 5) and by examining praise and rewards more specifically as opposed to a combination of a wide range of positive behavior support practices, as assessed by Mitchell and Bradshaw.

Our findings also extend previous findings by indicating that the association between students' perceptions of use of praise and rewards for good behavior and school climate, at the student level, is significantly stronger in middle school than high school. One possible explanation for this finding is that rewards and public praise from teachers may not be as desirable for high school students compared to middle school students. In support of this

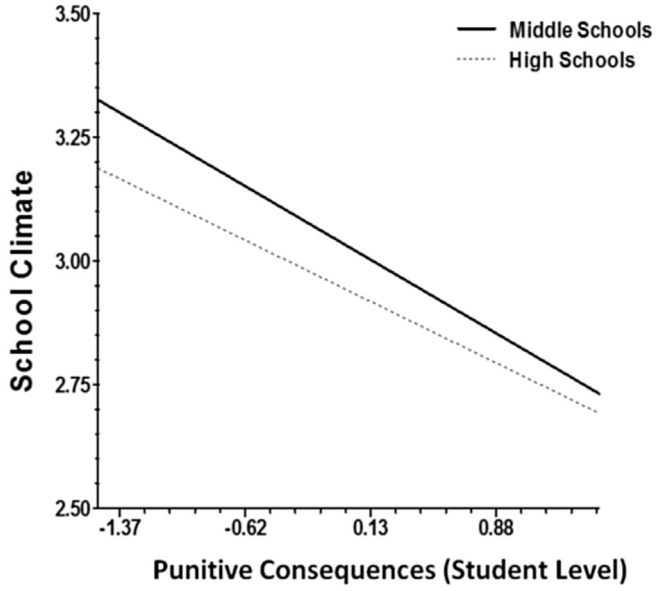

Fig. 3. Differences between middle and high school students in the association between punitive consequences and school climate.

hypothesis, one study found that students in Year 8 (i.e., 7th grade in the U.S.) reported more positive perceptions of the effects of public praise and rewards compared to students in Year 9 (i.e., 8th grade in the U.S.), which perhaps suggests that praise and rewards become less desirable as students become older (Shreeve et al., 2002). That study also found that teachers reported that reward systems were less effective with older students. If rewards and praise are less preferred by older students than younger students, it seems reasonable that they also would be less influential in determining perceptions of school climate, as well as student behavior (Brophy, 1981). This might at least partially explain why implementation of SWPBIS, with an emphasis on recognitions and rewards, is generally found to be more difficult in high school than elementary school (Horner, Sugai, & Anderson, 2010; McIntosh, Mercer, Nese, Strickland-Cohen, & Hoselton, 2015; Simonsen et al., 2012).

As we discuss later, causal relations among variables cannot be drawn, as the research design was neither longitudinal nor experimental, but instead cross-sectional and correlational. Nonetheless, our results are important in that they indicate that praise and rewards, as commonly used in schools, are not harmful to school climate, despite several researchers' warnings of the negative effects of the frequent use of praise and rewards, and especially when used in a controlling manner and when social comparisons are highlighted (Deci et al., 1999; Deci et al., 2001). Still, in light of the nature of the research design and research indicating that multiple factors, as listed earlier, influence the effectiveness of rewards and praise, educators should be cautious in concluding that increasing the use of praise and rewards necessarily leads to improvements in school climate.

6.3. Role of punitive consequences

As predicted, we found that students' perceptions of use of punitive consequences were negatively associated with their perceptions of school climate. This was found at both the student and school levels. As such, in elementary, middle, and high school, students who reported less use of punitive consequences perceived their school's climate more favorably. Grade level moderated the

strength of the negative association at the student level. That is, the association was stronger among students in middle school than in elementary school and high school. The moderation results also revealed that under conditions of low use of punitive consequences, students' perceptions of school climate in middle school were slightly more favorable than those of students in elementary school—a finding opposite to what was found with increasing perceived use of punitive consequences. Together, results suggest that increasing the use of punitive consequences has a greater impact on how students view their school's climate in middle school than in either elementary or high school. This perhaps reflects increased desire for autonomy (and less external control) during early adolescence (Eccles & Midgley, 1989).

Finding a negative association between students' perceptions of school climate and the frequency of use of punitive consequences across grade levels is consistent with our predictions. However, the finding differs slightly from those of Mitchell and Bradshaw's (2013) study, which found that although greater use of ODRs was related to lower student ratings of order and discipline, it was not related to the three other aspects of school climate assessed (fairness, student-teacher relationships, and achievement motivation). One possible reason for the disparity in findings is the different types of punitive consequences assessed in the studies. That is, Mitchell and Bradshaw assessed only one punitive consequence (i.e., ODRs), whereas we assessed a combination of punitive consequences (e.g., classroom removals, verbal reprimands) and punishment in general.

Although our results clearly demonstrate that greater use of punitive consequences, as perceived by students, is associated with less favorable perceptions of school climate, caution is warranted in concluding that punitive consequences, in general, should not be used in schools. As noted previously, causal relations were not determined. Moreover, research supports the wise and strategic use of punitive consequences, including being used in combination with positive techniques, for maintaining order and decreasing behavior problems (Brophy, 1996; Gottfredson, 2001; Landrum & Kauffman, 2006). As also noted previously, it is when students view punitive consequences as unfair or used too frequently or harshly that they are likely to view school climate less positively (Arum, 2003).

6.4. Role of teaching social and emotional competencies

As we predicted, at both the student and school levels, students' perceptions of their teachers' and school's teaching of social and emotional competencies were associated positively with their perceptions of school climate. This is consistent with other studies showing that SEL programs lead to more positive student perceptions of classroom and school climate (Brock et al., 2008; Brown et al., 2011). It also extends those studies in showing that greater teaching of social and emotional competencies, *in general*, and not necessarily within the context of a formal curriculum, as investigated by several previous studies (e.g., Brock et al., 2008; Brown et al., 2011), are associated with students' perceptions of a more positive school climate. Perhaps more impressively, results show that students' perceptions of school climate, irrespective of grade level, are associated more highly with perceived teaching of social and emotional competencies than with perceived use of praise and rewards for good behavior or use of punitive consequences. At both the student and school levels, the effect size for teaching social and emotional competencies was approximately twice that of praise and rewards, and at the student level it was twice the size of punitive consequences.

One plausible reason for the strong positive association between students' perceptions of the teaching of social and emotional competencies and school climate, irrespective of grade level, is that although such teaching tends to be less explicit in middle and high school (e.g., less curriculum and direct instruction) (Bridgeland, Bruce, & Hariharan, 2013), students still perceive SEL as being taught, perhaps with an increased emphasis on self-discipline, as tapped by several items on the measure of teaching social and emotional competencies employed in this study. Regardless of the specific method or technique for teaching social and emotional competences, an emphasis on teaching social and emotional competencies is likely to lead to greater prosocial behavior and fewer behavior problems for students (Durlak et al., 2011; Sklad, Diekstra, De Rittter, Ben, & Gravesteijn, 2012). In the context of fewer student behavior problems, school climate tends to be more positive (Brookmeyer, Fanti, & Henrich, 2006; Goldstein, Young, & Boyd, 2008; Gregory et al., 2010). Therefore, teaching social and emotional competencies may be related to school climate through student behaviors, although this pathway would certainly need to be further investigated in future research. Regardless, our results suggest that in addition to reducing behavior problems, a benefit of teachers teaching social and emotional competencies is a more positive school climate, at least as perceived by students.

6.5. Limitations of the study

Although the results of this study provide insight to educators and schools seeking ways to improve school climate, we should note several limitations. First, as noted previously, because the research design was cross-sectional and correlational and therefore not longitudinal or experimental, causal relationships between the use of management practices and school climate were not examined. Although it could be that teachers' frequent use of praise and rewards and teaching of social and emotional competencies and infrequent use of punitive consequences cause school climate to be more positive, one also could argue that a more positive school climate fosters greater use of praise and rewards and teaching social and emotional competencies and less use of punitive consequences.

Second, we relied primarily upon students' self-reports. As such, praise and rewards, punitive consequences, teaching social and emotional competencies, and school climate were assessed through the lenses of students, rather than via nonbiased observers. Unbiased observations of management practices in classrooms and schools may be preferable for valid assessment, as well as to avoid the potential threat of shared method variance. However, classroom observations are not without their own limitations (e.g., intrusiveness, time and costs, and coding). Moreover, research shows that behavior is influenced more by one's perceptions of the environment than by reality per se (Bandura, 1986, 1997; Bronfenbrenner, 1979). Another limitation to self-reports, especially with students as young as some in the current study (i.e., third graders), is that is unknown if the respondents fully understood the survey items.

A final limitation is that we did not examine the conditions in which praise and rewards, punitive consequences, and teaching social and emotional competencies were used. As noted previously, students are more likely to view school climate negatively when they perceive punitive consequences as unfair (Arum, 2003). In the current study we did not examine perceptions of fairness or other contextual factors that might moderate or mediate the relationship between use of punitive (or positive) management practices and school climate. In addition to examining the context of punitive consequences, future research should examine the relationship between the context in which praise and rewards are delivered and students' perceptions of school climate. This is especially true in light of reviews of the literature on use of rewards concluding that

they may harm intrinsic motivation when delivered in a socially controlling manner or when social comparisons are highlighted (Deci et al., 1999; 2001).

7. Conclusions and implications

As seen in our findings, in general, students view their school's climate more favorably when they perceive greater use of praise and rewards for good behavior, less use of punitive consequences, and greater teaching of social and emotional competencies. This is true within schools (at the individual student level) and between schools (at the school-wide level). Finding school climate to relate positively with the use of praise and rewards and negatively with use of punitive consequences was not surprising. What was not anticipated, however, was that student's perceptions of the teaching of social and emotional competencies related much more strongly with school climate than the other two management practices. That is, our findings showed that although each of the three types of management practices accounted for variance in school climate beyond that explained by the other two practices, teaching social and emotional competencies accounted for appreciably greater unique variance. This finding suggests that whereas school-wide use of praise and rewards for desired behavior and punitive consequences for undesired behavior certainly matter in students' perceptions of school climate (and likely play major roles in teaching social and emotional competencies), what is particularly important in how students view their school is the extent to which students perceive that they are actually being taught social and emotional competencies.

Overall, our findings indicate that if the aim of educators is to promote a positive school climate, especially as perceived by students, it is important that they recognize that students value a combination of techniques, both positive and punitive, to manage their behavior and develop their social and emotional competencies. Such a balanced approach, combining both teacher-directed and student-directed strategies and techniques, is consistent with research on best practices in classroom management and school discipline (Bear, 2010; 2015). However, the findings also indicate that in promoting a positive school climate, one's primary focus should be on implementing strategies that students view as developing their social and emotional competencies, rather than on the systematic and frequent dissemination of praise and rewards or the frequent use of punishment. Whereas strategies for developing social and emotional competences are emphasized in the SEL approach (Durlak et al., 2015), teachers' use of frequent praise and rewards to manage student behavior is emphasized in the behaviorally-oriented SWPBS approach (Simonsen & Sugai, 2009; Sugai & Horner, 2009), and punishment is emphasized in a zero-tolerance approach to school discipline (American Psychological Association Zero Tolerance Task Force, 2008). SEL strategies would include teaching curriculum-based lessons, but perhaps more importantly developing social and emotional competencies throughout the everyday life of the school, such as in the contexts of class meetings and discussions, disciplinary encounters, cooperative learning, service learning, sports and extra-curricular activities, and on-going teacher-student, student-student, and school-home relationships (Bear, 2010; Jones & Bouffard, 2012; Yoder, 2014; Zins et al., 2004).

Acknowledgments

This research was supported in part by a School Climate Transformation Grant #S184F140038 awarded to the Delaware Department of Education by the United States Department of Education.

References

Adelman, H. S., & Taylor, L. (2010). *Mental health in schools: Engaging learners, preventing problems, and improving schools*. Thousand Oaks, CA: Corwin.

Aguinis, H., Beaty, J. C., Boik, R. J., & Pierce, C. A. (2005). Effect size and power in assessing moderating effects of categorical variables using multiple regression: A 30-year review. *Journal of Applied Psychology, 90*, 94–107. http://dx.doi.org/10.1037/0021-9010.90.1.94.

Akin-Little, A., & Little, S. G. (2009). The true effects of extrinsic reinforcement on "intrinsic" motivation. In A. Akin-Little, S. G. Little, M. A. Bray, & T. J. Kehle (Eds.), *Behavioral interventions in schools: Evidence-based positive strategies* (pp. 73–91). Washington DC: American Psychological Association.

Alberto, P. A., & Troutman, A. C. (2006). *Applied behavior analysis for teachers* (7th ed.). Upper Saddle River, NJ: Prentice Hall.

American Psychological Association Zero Tolerance Task Force. (2008). Are zero tolerance policies effective in the schools? An evidentiary review and recommendations. *American Psychologist, 63*, 852–862. http://dx.doi.org/10.1037/0003-066X.63.9.852.

Anderson, C. S. (1982). The search for school climate: A review of the research. *Review of Educational Research, 52*, 368–420. http://dx.doi.org/10.1037/0003-066X.63.9.852.

Arum, R. (2003). *Judging school discipline: The crisis of moral authority*. Cambridge, MA: Cambridge University Press.

Bear, G. G. (2010). *School discipline and self-discipline: A practical guide to promoting prosocial student behavior*. New York, NY: Guilford.

Bear, G. G. (2015). Preventive classroom management. In E. T. Emmer, & E. J. Sabornie (Eds.), *Handbook of classroom management* (second ed., pp. 15–39). New York, NY: Routledge.

Bear, G. G., Gaskins, C., Blank, J., & Chen, F. F. (2011). Delaware school climate survey—student: Its factor structure, concurrent validity, and reliability. *Journal of School Psychology, 49*, 157–174. http://dx.doi.org/10.1016/j.jsp.2011.01.001.

Bear, G. G., Whitcomb, S., Elias, M., & Blank, J. (2015). SEL and schoolwide positive behavioral interventions and supports. In J. Durlak, T. Gullotta, C. Domitrovich, P. Goren, & R. Weissberg (Eds.), *Handbook of social and emotional learning* (pp. 453–467). New York, NY: Guilford.

Bear, G. G., Yang, C., Harris, A., Mantz, L., Hearn, S., & Boyer, D. (2016). *Technical manual for Delaware surveys of school climate; bullying victimization, student engagement, and positive, punitive, and social emotional learning techniques; and social and emotional competencies*. Retrieved from University of Delaware, Center for Disabilities Studies, Positive Behavioral Supports and School Climate Project website: http://wordpress.oet.udel.edu/pbs/technical-manual-for-school-climate-surveys.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Upper Saddle River, NJ: Prentice-Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.

Bridgeland, J., Bruce, M., & Hariharan, A. (2013). *The missing piece: A national teacher survey on how social and emotional learning can empower children and transform schools. A report for CASEL. Civic Enterprises*. Retrieved from http://files.eric.ed.gov/fulltext/ED558068.pdf.

Brock, L. L., Nishida, T. K., Chiong, C., Grimm, K. J., & Rimm- Kaufman, S. E. (2008). Children's perceptions of the classroom environment and social and academic performance: A longitudinal analysis of the contribution of the responsive classroom approach. *Journal of School Psychology, 46*, 129–149. http://dx.doi.org/10.1016/j.jsp.2007.02.004.

Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.

Brookmeyer, K. A., Fanti, K. A., & Henrich, C. C. (2006). Schools, parents, and youth violence: A multilevel, ecological analysis. *Journal of Clinical Child and Adolescent Psychology, 35*, 504–514. http://dx.doi.org/10.1207/s15374424jccp3504_2.

Brophy, J. E. (1981). Teacher praise: A functional analysis. *Review of Educational Research, 51*, 5–32. http://dx.doi.org/10.3102/00346543051001005.

Brophy, J. E. (1996). *Teaching problem students*. New York, NY: Guilford Press.

Brown, E. C., Low, S., Smith, B. H., & Haggerty, K. P. (2011). Outcomes from a school-randomized controlled trial of steps to respect: A bullying prevention program. *School Psychology Review, 40*(3), 423–443.

Cameron, J., & Pierce, W. D. (1994). Reinforcement, reward, and intrinsic motivation: A meta-analysis. *Review of Educational Research, 64*, 363–423. http://dx.doi.org/10.2307/1170677.

Cerasoli, C. P., Nicklin, J. M., & Ford, M. T. (2014). Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis. *Psychological Bulletin, 140*, 980–1008. http://dx.doi.org/10.1037/a0035661.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.

Cohen, J., McCabe, E. M., Michelli, N. M., & Pickeral, T. (2009). School climate: Research, policy, practice, and teacher education. *Teachers College Record, 111*(1), 180–213.

Collaborative for Academic, Social, and Emotional Learning (CASEL). (2012). *2013 CASEL guide: Effective social and emotional programs—Preschool and elementary edition*. Chicago: Author.

Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin, 125*, 627–668. http://dx.doi.org/10.1037/0033-2909.125.6.627.

Deci, E. L., Koestner, R., & Ryan, R. M. (2001). Extrinsic rewards and intrinsic motivation in education: Reconsidered once again. *Review of Educational*

Research, 71, 1–27. http://dx.doi.org/10.3102/00346543071001001.
Durlak, J. A., Domitrovich, C. E., Weissberg, R. P., & Gullotta, T. P. (2015). *Handbook of social and emotional learning: Research and practice*. New York: Guilford.
Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). Enhancing students' social and emotional development promotes success in school: Results of a meta-analysis. *Child Development, 82*, 405–432. http://dx.doi.org/10.1111/j.1467-8624.2010.01564.x.
Eccles, J. S., & Midgley, C. (1989). Stage-environment fit: Developmentally appropriate classrooms for early adolescents. In C. Ames, & R. Ames (Eds.), *Research on motivation in education: Volume 3. Goals and cognitions* (pp. 139–186). New York, NY: Academic Press.
Elsaesser, C., Gorman-Smith, D., & Henry, D. (2013). The role of the school environment in relational aggression and victimization. *Journal of Youth and Adolescence, 42*, 235–249. http://dx.doi.org/10.1007/s10964-012-9839-7.
Emmer, E. T. (1988). Praise and the instructional process. *Journal of Classroom Interaction, 23*(2), 32–39.
Fan, W., Williams, C. M., & Corkin, D. M. (2011). A multilevel analysis of student perceptions of school climate: The effect of social and academic risk factors. *Psychology in the Schools, 48*, 632–647. http://dx.doi.org/10.1002/pits.20579.
Goldstein, S. E., Young, A., & Boyd, C. (2008). Relational aggression at school: Associations with school safety and social climate. *Journal of Youth and Adolescence, 37*, 641–654. http://dx.doi.org/10.1007/s10964-007-9192-4.
Gottfredson, D. C. (2001). *Schools and delinquency*. New York: Cambridge University Press.
Gregory, A., Cornell, D., Fan, X., Sheras, P., Shih, T., & Huang, F. (2010). High school practices associated with lower student bullying and victimization. *Journal of Educational Psychology, 102*, 483–496. http://dx.doi.org/10.1037/a0018562.
Horner, R. H., Sugai, G., & Anderson, C. M. (2010). Examining the evidence base for school-wide positive behavior support. *Focus on Exceptional Children, 42*(8), 1–14.
Jia, Y., Way, N., Ling, G., Yoshikawa, H., Chen, X., Hughes, D., et al. (2009). The influence of student perceptions of school climate on socioemotional and academic adjustment: A comparison of Chinese and American adolescents. *Child Development, 80*, 1514–1530. http://dx.doi.org/10.1111/j.1467-8624.2009.01348.x.
Jones, S. M., & Bouffard, S. M. (2012). *Social and emotional learning in schools: From programs to strategies. Social Policy Report* (Vol. 26). Society for Research in Child Development. Number 4.
Koth, C. W., Bradshaw, C. P., & Leaf, P. J. (2008). A multilevel study of predictors of student perceptions of school climate: The effect of classroom-level factors. *Journal of Educational Psychology, 100*, 96–104. http://dx.doi.org/10.1037/0022-0663.100.1.96.
Kumpfer, K. L., Alvarado, R., Tait, C., & Turner, C. (2002). Effectiveness of school-based family and children's skills training for substance abuse prevention among 6-8-year-old rural children. *Psychology of Addictive Behaviors, 16*, 65–71. http://dx.doi.org/10.1037/0893-164X.16.4S.S65.
Kuperminc, G. P., Leadbeater, B. J., Emmons, C., & Blatt, S. J. (1997). Perceived school climate and difficulties in the social adjustment of middle school students. *Applied Developmental Science, 1*, 76–88. http://dx.doi.org/10.1207/s1532480xads0102_2.
Landrum, T. J., & Kauffman, J. M. (2006). Behavioral approaches to classroom management. In C. M. Evertson, & C. S. Weinstein (Eds.), *Handbook of classroom management: Research, practice, and contemporary issues* (pp. 47–71). Mahwah, NJ: Erlbaum.
Lee, V. E., Loeb, S., & Lubeck, S. (1998). Contextual effects of prekindergarten classrooms for disadvantaged children on cognitive development: The case of Chapter 1. *Child Development, 69*(2), 479–494. http://dx.doi.org/10.1111/j.1467-8624.1998.tb06203.x.
Loukas, A., Suzuki, R., & Horton, K. D. (2006). Examining school connectedness as a mediator of school climate effects. *Journal of Research on Adolescence, 16*, 491–502. http://dx.doi.org/10.1111/j.1532-7795.2006.00504.x.
Low, S., Van Ryzin, M. J., Brown, E. C., Smith, B. H., & Haggerty, K. P. (2014). Engagement matters: Lessons from assessing classroom implementation of steps to respect: A bullying prevention program over a one-year period. *Prevention Science, 15*, 165–176. http://dx.doi.org/10.1007/s11121-012-0359-1.
Marsh, H. W., Lüdtke, O., Nagengast, B., Trautwein, U., Morin, A. J., Abduljabbar, A. S., et al. (2012). Classroom climate and contextual effects: Conceptual and methodological issues in the evaluation of group-level effects. *Educational Psychologist, 47*, 106–124. http://dx.doi.org/10.1080/00461520.2012.670488.
Mayer, M. J., & Leone, P. E. (1999). A structural analysis of school violence and disruption: Implications for creating safer schools. *Education and Treatment of Children, 22*(3), 333–356.
McIntosh, K., Mercer, S. H., Nese, R. N., Strickland-Cohen, M. K., & Hoselton, R. (2015). Predictors of sustained implementation of school-wide positive behavioral interventions and supports. *Journal of Positive Behavior Interventions*, 1–10. http://dx.doi.org/10.1177/1098300715599737.
Mitchell, M. M., & Bradshaw, C. (2013). Examining classroom influences on student perceptions of school climate: The role of classroom management and exclusionary discipline strategies. *Journal of School Psychology, 51*, 599–610. http://dx.doi.org/10.1016/j.jsp.2013.05.005.
Mitchell, M. M., Bradshaw, C. P., & Leaf, P. J. (2010). Student and teacher perceptions of school climate: A multilevel exploration of patterns of discrepancy. *Journal of School Health, 80*, 271–279. http://dx.doi.org/10.1111/j.1746-1561.2010.00501.x.
Office for Civil Rights. (2010). *Civil Rights data collection*. Retrieved from http://ocrdata.ed.gov/StateNationalEstimations.
Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*. Thousand Oaks, CA: Sage.
Rigby, K. (2000). Effects of peer victimization in schools and perceived social support on adolescent well-being. *Journal of Adolescence, 23*, 57–68. http://dx.doi.org/10.1006/jado.1999.0289.
Shreeve, A., Boddington, D., Bernard, B., Brown, K., Clarke, K., Dean, L., … Shiret, D. (2002). Student perceptions of rewards and sanctions. *Pedagogy, Culture & Society, 10*, 239–256. http://dx.doi.org/10.1080/146813602002001.
Simonsen, B., Eber, L., Black, A. C., Sugai, G., Lewandowski, H., Sims, B., et al. (2012). Illinois statewide positive behavioral interventions and supports evolution and impact on student outcomes across years. *Journal of Positive Behavior Interventions, 14*, 5–16. http://dx.doi.org/10.1177/1098300711412601.
Simonsen, B., & Sugai, G. (2009). School-wide positive behavior support: A systems-level application of behavioral principles. In A. Akin-Little, S. G. Little, M. Bray, & T. Kehle (Eds.), *Behavioral interventions in schools: Evidence-based positive strategies* (pp. 125–140). Washington, DC: American Psychological Association.
Sklad, M., Diekstra, R., De Rittter, M., Ben, J., & Gravesteijn, C. (2012). Effectiveness of school-based universal social, emotional, and behavioral programs: Do they enhance students' development in the area of skill, behavior, and adjustment? *Psychology in the Schools, 49*, 892–909. http://dx.doi.org/10.1002/pits.21641.
Social and Character Development Research Consortium. (2010). *Efficacy of schoolwide programs to promote social and character development and reduce problem behavior in elementary school children*. Washington, DC: National Center for Education Research, Institute of Education Sciences, US Department of Education.
Sugai, G., & Horner, R. H. (2009). Defining and describing schoolwide positive behavior support. In W. Sailor, G. Dunlap, G. Sugai, & R. H. Horner (Eds.), *Handbook of positive behavior support* (pp. 307–326). New York: Springer Science and Business Media.
Suldo, S. M., Thalji-Raitano, A., Hasemeyer, M., Gelley, C. D., & Hoy, B. (2013). Understanding middle school students life satisfaction: Does school climate matter? *Applied Research in Quality of Life, 8*, 169–182. http://dx.doi.org/10.1007/s11482-012-9185-7.
Upshur, C., Wenz-Gross, M., & Reed, G. (2013). A pilot study of a primary prevention curriculum to address preschool behavior problems. *The Journal of Primary Prevention, 34*, 309–327. http://dx.doi.org/10.1007/s10935-013-0316-1.
Verkuyten, M., & Thijs, J. (2002). School satisfaction of elementary school children: The role of performance, peer relations, ethnicity and gender. *Social Indicators Research, 59*, 203–228. http://dx.doi.org/10.1023/A:1016279602893.
Vieno, A., Perkins, D. D., Smith, T. M., & Santinello, M. (2005). Democratic school climate and sense of community in school: A multilevel analysis. *American Journal of Community Psychology, 36*, 327–341. http://dx.doi.org/10.1007/s10464-005-8629-8.
Wang, M. T., & Dishion, T. J. (2012). The trajectories of adolescents' perceptions of school climate, deviant peer affiliation, and behavioral problems during the middle school years. *Journal of Research on Adolescence, 22*, 40–53. http://dx.doi.org/10.1111/j.1532-7795.2011.00763.x.
Wang, W., Vaillancourt, T., Brittain, H. L., McDougall, P., Krygsman, A., Smith, D., … Hymel, S. (2014). School climate, peer victimization, and academic achievement: Results from a multi-informant study. *School Psychology Quarterly, 29*, 360–377. http://dx.doi.org/10.1037/spq0000084.
Waters, S. K., Cross, D. S., & Runions, K. (2009). Social and ecological structures supporting adolescent connectedness to school: A theoretical model. *Journal of School Health, 79*, 516–524. http://dx.doi.org/10.1111/j.1746-1561.2009.00443.x.
Watkins, N. D., & Aber, M. S. (2009). Exploring the relationships among race, class, gender, and middle school students' perceptions of school racial climate. *Equity & Excellence in Education, 42*, 395–411. http://dx.doi.org/10.1080/10665680903260218.
Wentzel, K. R. (2002). Are effective teachers like good parents? Teaching styles and student adjustment in early adolescence. *Child Development, 73*, 287–301. http://dx.doi.org/10.1111/1467-8624.00406.
Wilson, D. (2004). The interface of school climate and school connectedness and relationships with aggression and victimization. *Journal of School Health, 74*, 293–299. http://dx.doi.org/10.1111/j.1746-1561.2004.tb08286.x.
Yoder, N. (2014). *Teaching the whole child: Instructional practices that support social and emotional learning in three teacher evaluation frameworks*. Washington, DC: American Institutes for Research Center on Great Teachers and Leaders.
Zins, J. E., Bloodworth, M. R., Weissberg, R. P., & Walberg, H. J. (2004). The scientific base linking social and emotional learning to school success. In J. E. Zins, R. P. Weissberg, M. C. Wang, & H. J. Walberg (Eds.), *Building academic success on social and emotional learning: What does the research say?* (pp. 3–22). New York: Teachers College Press.