AN EXAMINATION OF THE MUTUAL IMPACT OF STUDENTS' SENSE OF

SCHOOL BELONGING AND ADJUSTMENT IN A SAMPLE OF URBAN, ETHNIC-

MINORITY, ELEMENTARY-AGED STUDENTS

by

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ABSTRACT OF THE DISSERTATION

An Examination of the Mutual Impact of Students' Sense of School Belonging and Adjustment

in a Sample of Urban, Ethnic-minority, Elementary-aged students

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The purpose of this study was to investigate the reciprocal relationship between students'

sense of school belonging, and their behavioral and psychological adjustment during one

academic year in a sample of urban, low-income, African American and Latino,

elementary-aged students. Data from 410 2nd and 5th grade students were used in the

analyses, drawn from twenty-three classes, spanning seven elementary schools. Students

completed self-reports of perceived sense of school belonging and self-concept during the

Fall and Spring semesters of one academic year. For the corresponding year, teachers

completed a teacher-rated survey assessing social skills, problem behaviors, and

academic competence for each student in their classes in the Fall and Spring. Results

indicated that females reported higher levels of school belonging than their male

counterparts; differential effects by ethnicity or age were not observed. Students' sense of

school belonging was positively correlated with social skills, self-concept, and academic

competence; and inversely correlated with problem behaviors. Overall levels of school

belonging did not differ between the Fall and Spring. Reported levels of school

belonging in the Fall predicted problem behaviors in the Spring controlling for previous

levels, though, Fall levels of school belonging were not associated with teacher-rated

social skills or academic competence, or students' reports of self-concept when previous levels of such measures and demographic variables were controlled. Finally, Fall levels of problem behaviors and social skills predicted students' sense of school belonging in the Spring, controlling for previous levels of school belonging. Collectively, the findings suggest a reciprocal relationship between students' sense of school belonging and students' social and emotional competencies in urban, early and late elementary, minority students. The important theoretical and practical implications of the current study are discussed.

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Students' academic performance and behaviors are as much influenced by the school environment as by individual differences in skills, capacities, and genetics. One contextual variable that has been receiving increasing attention in the literature is students' sense of school belonging. A growing body of research shows that youth who feel a sense of belonging in the school environment experience positive academic and psychosocial outcomes (Cohen, 2006; Osterman, 2000). However, the vast majority of school belonging investigations are cross-sectional and sample middle-school students (see Juvonen, 2007 for a review), thereby limiting our understanding of how school belonging develops and evolves over time in relation to achievement, mental health, and behaviors, particularly with younger children. Further, most researchers solely examine student outcomes as a product of students' sense of school belonging; thus, the degree to which children's mental health, behaviors, and academic performance contribute to students' perceptions of being a part of the academic environment remains largely unexamined. Finally, a paucity of research has examined the impact of students' sense of school belonging using urban, minority, elementary-aged students. Some evidence, albeit with middle school students, suggests that the construct is more strongly correlated with positive outcomes for certain ethnic-minority groups relative to Caucasians (e.g., Goodenow & Grady, 1993). Broadly, the objectives of the current study are to investigate the reciprocal relationship between students' sense of school belonging and adjustment, and to examine trends in school belonging over one academic year in a sample of urban, ethnic-minority, elementary students.

School Belonging and Similar Terms

School belonging was originally defined as, "students' sense of being accepted, valued, included, and encouraged by others (teachers and peers) in the academic classroom setting and of feeling oneself to be an important part of the life and activity of the class" (Goodenow, 1993a, p. 25). Goodenow (1993b) was one of the first researchers to empirically test students' sense of school belonging, utilizing her Psychological Sense of School Membership (PSSM) scale in relation to important student outcomes including academic motivation and achievement. Scale items assess feelings of acceptance, inclusion, and respect; encouragement from students, teachers, and other adults in the school environment; and students' sense of being a part of their school.

Currently, investigators use multiple terms to denote students' perceptions of the social environment and their place within it, including school belonging, sense of community, school membership, school bonding, school connectedness, school engagement, relatedness, and teacher connectedness/support. Variations in terms and, at times, the same terms used in different ways reflect slight differences in the conceptualization and measurement of belonging. Nevertheless, most of these constructs overlap on such components as perceiving oneself to be a part of the school environment, a sense of peer and teacher connectedness/support, and feelings of acceptance and engagement, though some school belonging measures also include explicit indices assessing student voice (e.g., influence, autonomy), liking school, participation in extracurricular activities, safety, and discipline/fairness (Libbey, 2004). Despite varying definitions, conceptualizations, measures, and terms, students' sense of school belonging

and similar constructs are associated with a plethora of positive school belonging

correlates (Libbey, 2004; Osterman, 2000).

Why is Belonging Important in the School Setting?

Many educational practices and policies continue to be predicated on a set of

assumptions that lead to an emphasis on competition and the recognition of the individual

student as a means of fostering academic growth and enhancing students' performance on

standardized tests (Osterman, 2000). These assumptions include the beliefs that academic

competence takes precedence over students' sense of school belonging, and students'

socioemotional needs are tended to outside the confines of school. In contrast, others have

posited education to be a relational rather than an individualistic process that requires the

development of a community of primarily students and teachers, facilitated by adults in

the school environment (Dewey, 1958). Community is essentially characterized as a sense

of belonging to the school environment and provides the basis for collaborative learning.

A number of researchers have argued that a caring and supportive school environment is

not only a precondition for students' academic achievement, but is a necessary precursor

to positive development including social and emotional competencies to which academic

competence is inextricably tied (e.g., Comer, 2004; Elias, Zins, Graczyk, & Weissberg,

2003). It is in this supportive context that cognitive, social, and emotional growth can be

fostered and nurtured. In an effort to elucidate how students' perceptions of relational and

contextual factors operate in the school environment, researchers have endeavored to

explore students' sense of school belonging as it relates to motivation, achievement,

problem behaviors, prosocial skills, and self-concept, and less often, how it develops.

Sense of School Belonging: Guiding Definition and Theory

Motivational theorists argue that the need for belonging is a fundamental human psychological need. In Maslow's (1943) motivational hierarchy, the need for belonging and love takes priority over self-esteem and self-actualization, only to be preceded by physiological essentials (e.g., food, warmth) and safety. Baumeister and Leary (1995) posited that individuals are motivated to meet belongingness needs through pleasant interactions with a minimum number of others in an array of settings. These interactions should be rooted in relatively stable, positive relationships characterized by reciprocal caring. In an effort to determine whether belongingness could be substantiated as a basic human motivation, the theorists conducted a rather expansive review of the empirical literature drawing on a vast array of investigations from social and personality psychology, sociology, and anthropology. Consistent with theoretical predictions, the authors found that a lack of belongingness is associated with such negative outcomes as depression, anxiety, loneliness, stress, criminal behaviors, and suicidality.

In the current study, belonging is viewed as a fundamental need and as such, it is expected that students' academic, psychological, and behavioral adjustment will vary to the extent that their need for belonging is met in the school setting. However, in the current conceptualization, students' sense of school belonging and related outcomes are not simply a product of having positive interpersonal relationships at school, but also a function of having a community with which students can identify and feel a part of, where students and teachers are bound together for a common purpose.

Thus, the current study's definition and model of school belonging are largely influenced by the perspective posited by McMillan and Chavis (1986) as a *sense of community.* Within this framework, a community is comprised of four components:

membership, influence, integration and fulfillment of needs, and a shared emotional connection. These four elements may be understood as dimensions of students' sense of school belonging, and serve as a useful guide to understanding how students develop feelings of acceptance, support, inclusion, and respect in the school environment (Goodenow, 1993b).

Membership needs are met when individuals identify with and feel a sense of being a part of a group. Influence exists when members consider the group important and feel important to the group. Applied to the school setting, this may be reflected by students' choice to adhere to and internalize school or classroom norms and values; simultaneously, students feel that their voice is important to the group and may exert influence on group processes and practices. Integration and fulfillment needs are met when members feel cared for and supported. Further, members trust that their individual and group needs for learning, for example, will be met. An emotional connection includes feeling invested in the history and status of the group, and experiencing frequent and positive interactions.

When students experience membership, influence, integration and fulfillment of needs, and an emotional connection to the school environment, a sense of belonging is achieved. Students who feel a sense of belonging are more likely to internalize and exhibit healthy models of behavior that, in effect, influence the degree of support, respect, and acceptance they receive and, in turn, experience in the school environment. In other words, the dynamic behaviors denoted by school belonging generate contexts in which adjustment is perceived positively and reacted to in a congruent manner, thus generating reciprocal behaviors that reinforce students' sense of belonging and perpetuate a positive

cycle. In the present paper, the terms students' sense of school belonging, school belonging, and a sense of community will be used interchangeably.

Correlates of Students' Sense of School Belonging

Although initial investigations primarily examined students' sense of school belonging in relation to school dropout (e.g., Wehlage, 1989), the literature has expanded its scope to include the exploration of mental health, behavioral functioning, and academic achievement. As similar findings have been yielded using varying school belonging constructs representing students' perception of their relationship to school, some investigations employing terms other than students' sense of school belonging, students' sense of community, or school belonging will be reviewed. For the purposes of clarity, studies reviewed using similar constructs but alternate terms will be identified and defined according to how they appear in the literature. It is important to note that while some researchers use a unidimensional construct to measure students' perceptions of their relationship to school (e.g., Battistich & Hom, 1997; Goodenow, 1993b), other researchers consider the independent contributions of one or several indices of a student's relationship to school (e.g., school identification, teacher connectedness, peer acceptance) to student outcomes (e.g., Gest, Welsh, & Domitrovich, 2005; Sirin & Rogers-Sirin, 2005). Given convergent findings of investigations using broad unidimensional and multidimensional measures of students' sense of school belonging and similar constructs, the ensuing literature will examine both.

Mental Health, Behaviors, and Wellbeing

Some research indicates that students' sense of school belonging is related to social skills, health-risk behaviors, and engagement in violence and delinquency (e.g.,

McNeely & Falci, 2004; Wilson, 1999). For example, positive associations between school belonging and behavioral conduct including self-control, adherence to rules, and prosocial skills have been identified in a sample of middle school students (Hagborg, 1994). In another study, Battistich and Hom (1997) investigated the relationship between students' sense of community and delinquency behaviors in an ethnically and socioeconomically diverse sample of 1,434, 5th and 6th graders. Between and within school analyses indicated that schools with above average levels of a sense of community had lower levels of delinquency and substance use controlling for gender and grade. Higher levels of students' sense of community were associated with lower levels of problem behaviors for low and moderate poverty schools, but not for high poverty schools.

Though behavioral correlates of school belonging including aggression and delinquency have been fairly well documented in the literature, surprisingly few examinations have included such mental health outcomes as depression and anxiety (e.g., Loukas, Suzuki, & Horton, 2006). Shochet, Dadds, Ham, and Montague (2006) conducted a longitudinal study to examine the relationship between school belonging and internalizing and externalizing symptoms in 2,022 mostly Caucasian Australian students between the ages of 12 to14. Participants were recruited to take part in a prevention project for depression, and completed self-reports of hyperactivity, emotional symptoms, conduct problems, peer problems, and prosocial activities collected at three time points. School belonging predicted depressive and anxiety symptoms, as well as general functioning one year later when controlling previous levels, though effects varied by gender.

Other researchers have found positive associations between students' perceptions of the school environment and social and emotional functioning employing constructs similar to school belonging with elementary-aged youth. In a study sampling 289 predominately Caucasian, urban elementary students, *school bonding*, defined as an emotional attachment (e.g., enjoying school) to and investment in school (e.g., completing homework), in addition to students' representations of their relationships with teachers were examined in relation to student adjustment (Murray & Greenberg, 2000). Participants were categorized via a cluster analysis into groups (e.g., dysfunctional, positively involved) based on student reports of supportive teacher relationships and school bonds; classifications were related to social and emotional competencies. Self- and teacher-reports confirmed that students in the dysfunctional group (low school bonding and teacher affiliation scores, and above average ratings in teacher dissatisfaction and safety concerns) had greater internalizing and externalizing behaviors, and less academic and social competence compared with students in the positively involved group (high school bonding and teacher affiliation scores, and below average ratings of teacher dissatisfaction and safety concerns).

Similarly, a large study sampling Caucasian 10-16 year-olds showed that students' relationship to the school environment may have powerful ramifications over a period of 2-4 years (Bond et al., 2007). A *social connectedness* measure assessing the adequacy of peer relationships (e.g., having someone to talk to when upset) and a *school connectedness* measure (tapping perceptions of being a part of the school environment, teacher and peer relationships, and opportunities to participate) were examined. Youth who were classified as moderate to very high in social and school connectedness were at

the lowest risk for developing depressive and anxiety symptoms, controlling for demographic factors.

Other studies suggest that school belonging is associated with beliefs about the self (see Osterman, 2000 for a review). For example, Hagborg (1994) investigated the relationship between school belonging and self-concept in a sample of 50, 8th grade Caucasian middle school students. Using a median split, he found that students who self-reported a high degree of school belonging also regarded themselves more positively than students who felt a low degree of school belonging. The author noted that feelings of self-regard are closely tied to the perceptions of critical others.

Academic Achievement

An extensive body of research has examined linkages between students' sense of school belonging and indicators of achievement and related indices (e.g., effort). As suggested by certain models relating school belonging to positive outcomes (e.g., Finn, 1989), some of these investigations conceptualize school belonging as an antecedent to motivation, which, in turn, influences subsequent effort and achievement. In one such study, Goodenow (1993a) investigated the linkages among school belonging, academic motivation (operationalized as expectancies of success and intrinsic value in academic pursuits), and academic effort and achievement. A sample of 353 6th, 7th, and 8th grade predominately Caucasian middle class students completed self-reports of classroom belonging and support, expectancies of success in academic subjects, and intrinsic academic value; teachers submitted their students' grades and completed effort ratings for each student. Strong associations were obtained between the classroom belonging and support measure (assessing teacher support, peer support, belonging/alienation) with

expectancies for success in academics, as well as value placed on academic work. The success expectancy index was the strongest predictor of academic performance and effort; however, school belonging was also associated with academic performance and effort, over and beyond that of intrinsic value placed on academics. Consonant with the previous study and using a similar sample, Hagborg (1998) found that students categorized as experiencing a high sense of school belonging (defined by a median split) had better grades, committed more time to completing homework, and self-reported more motivation to learn.

In a related manner, Sirin and Rogers-Sirin (2005) examined the independent influence of specific components of *school engagement* on academic outcomes in a sample of 499 African American adolescents in grades 9 to 11. The study was guided by Finn's (1989) two-dimensional model of school engagement. In this framework, school identification (defined as an emotional connection with others and a sense of being part of the school environment) and participation (e.g., class participation, homework compliance, participation in school clubs), are necessary components of achievement. In addition to identification and participation, the authors expanded the model to include school expectations, a measure of future educational aspirations. School engagement significantly accounted for academic outcomes after controlling gender, grade, IQ, and mothers' education. Analyses for separate school engagement indices indicated that participation and expectancies significantly contributed to the model. Though students' identification was associated with academic outcomes in a correlational analysis, it did not significantly contribute to the regression model. This finding stands in contrast with previous research using younger samples (Goodenow, 1993a; Klem & Connell, 2004).

The authors suggested that identification might be developmentally more important for primary and secondary students, whereas participation and expectancies are likely stronger predictors of achievement for older adolescents.

Antecedents of Students' Sense of School Belonging

Evidence presented thus far indicates that school belonging is positively related to positive outcomes for primary, and, particularly, secondary students, including academic engagement and achievement, problem behaviors, and social competence. Given the growing body of evidence linking students' sense of community with psychological, cognitive, and behavioral realms, several investigations aimed to identify precursors to school belonging across varying levels of a student's ecology.

Student and family demographic factors. Thompson and associates (2006) explored the relationship between levels of *school connectedness* and student, school, and neighborhood factors in a cross-sectional study sampling 13, 207 6-10th grade students (further explicated below). School connectedness was defined as the sum of statements assessing acceptance, enjoyment of school, and support. Results indicated that school connectedness was significantly greater for younger students, participants whose parents were involved in school, students in two-parent households, good-looking students, and female students. Minority status did not predict school connectedness.

School factors. Thompson and his colleagues (2006) found that higher levels of school connectedness were obtained in smaller schools, schools with more racial uniformity, and schools with students from wealthier families. Students who had chosen to transfer to a new school experienced lower levels of connectedness than those who chose to stay at their school. Though minority status was not significantly related to students'

perceptions of connectedness to school, status as a majority ethnic-group member in a given school has been associated with school connectedness rather than ethnicity per se (Goodenow, 1993b).

Neighborhood factors. Higher levels of school belonging have been identified in suburban samples (Goodenow, 1993b). A greater degree of connectedness has been found in areas populated with larger numbers of non-US citizens and areas with fewer renters (Thompson et al., 2006).

Academic, Behavioral, and Social Antecedents of Students' Sense of School Belonging

Though most developmental models explaining students' sense of school belonging and similar constructs place causal primacy on such factors as feelings of belonging or bonding similarly to the sense of community model (e.g., Finn, 1989; Hawkins, Guo, Hill, Battin-Pearson, & Abbott, 2001, McMillan & Chavis, 1986; Wehlage, 1989), they simultaneously imply a transactional relationship between students' sense of their relationship with the school environment and adjustment whereby students' behaviors should also influence their perceptions of their relationship to the school environment. Nevertheless, explicit bidirectional investigations are virtually absent from the literature, though a few studies have examined the influence of student behaviors on perceptions of school belonging (e.g., Anderman, 2003). Such explorations are critical in that they serve to complement the extensive body of cross-sectional research demonstrating the link between students' sense of school belonging and adjustment outcomes by potentially broadening and better approximating the ongoing dynamic implied by school belonging theories.

In one longitudinal study, academic achievement and motivational variables (i.e., GPA, success expectancies, intrinsic value) were examined as antecedents to changes in students' perceptions of school belonging in a sample of 618 6th and 7th grade predominately Caucasian urban and rural students (Anderman, 2003). The results indicated that students' previous GPA as well as the degree to which they believed in the utility of academics predicted students' sense of belonging. Such findings are consistent with research indicating a link between such relationships at one time point; however, such linkages are typically examined in the reverse temporal order (e.g., Goodenow, 1993a). The author argued that given the emphasis on grades in schools, it would likely be difficult for poorer academically performing students to experience a sense of place in an academic institution in comparison to students who perform well and are reinforced for such behaviors. On average, students reported a decline in school belonging from the Spring semester of 6th grade through the following Spring, lending support to some cross-sectional findings suggesting that students' sense of school belonging dissipates across middle to high school (e.g., Thompson et al., 2006).

One preliminary investigation examined behavioral predictors of indices of *school relatedness* in the school context sampling 383 Caucasian 3rd-5th graders in a brief longitudinal study (Gest, Welsh, & Domitrovich, 2005). School relatedness was defined by three separate dimensions: teacher supportiveness (perceptions of teacher support and closeness in the classroom), school supportiveness (overall school climate including degree of respect and caring among students and adults), and loneliness (feelings of alienation). Teacher ratings were used to assess such behaviors as aggression, attention problems, and loneliness. Students completed self-reports including teacher and school

supportiveness measures. Students rated as exhibiting higher levels of aggression in the Fall according to teacher ratings reported declines in perceptions of teacher supportiveness and more loneliness in the Spring relative to the Fall.

Interestingly, results indicated overall declines in perceptions of school relatedness across one academic year. Though the previous study could not elucidate the finding derived directly from their study data, the authors surmised that beginning levels of enthusiasm may dissipate with the vicissitudes of daily student-teacher exchanges, and pointed to anecdotal support implying that students and teachers become increasingly negative with the progression of the school year (Asher & Coie, 1990). Overall, girls reported higher levels of teacher and school supportiveness than boys. Between grade examinations of overall differences in school and teacher supportiveness indicated that older and younger students reported similar levels of teacher support, but older students perceived the school environment as less supportive than younger students.

The Influence of Ethnicity, Age, and Gender

Some evidence suggests that associations between school belonging and adjustment, particularly, with regard to academic related outcomes, might be moderated by ethnicity, gender, and age.

Ethnicity

Research examining the moderating effects of ethnicity on linkages between school belonging and achievement related indices is mixed. For example, in one study sampling urban minority and Caucasian suburban participants, patterns in associations between students' sense of school belonging and achievement measures (e.g., grades, effort) were similar across ethnicity (Goodenow, 1993b). In another study, relationship

among academic motivation, effort, and school belonging were also found using a diverse sample of junior high school students (Goodenow & Grady, 1993); however, the relationship between school belonging and academic effort was stronger for Hispanics relative to Caucasians and African Americans. Somewhat in contrast to the previous study, Sanchez, Colon, and Esparza (2005) found that a sense of belonging was positively related to achievement indices including effort, intrinsic value, and absences, but it was not related to GPA in their sample of late-adolescent urban Latino students. The authors hypothesized that a sense of school belonging might be less critical to certain academic outcomes for late adolescents relative to middle, and, particularly, elementary students.

In a study sampling African Americans, higher levels of school belonging and academic achievement were unrelated in elementary and middle school participants, despite the fact that on average, students reported feelings of belongingness to their schools (Voelkl, 1997). Similarly, Sirin and Rogers-Sirin (2005) found that school identification (feelings of belonging and a positive emotional connection with school) did not predict academic outcomes for African American high school students. Mixed findings on the relationship between students' sense of school belonging and achievement for ethnic-minority samples may be partially attributed to genuine differences in how feelings of belongingness impact varying ethnic groups; it may also related to differences in how achievement was operationalized across studies, differences in participants' ages, or slight variations in how school belonging was defined and measured (Goodenow & Grady, 1993; Sanchez et al., 2005; Voelkl, 1997). Moreover, as noted previously, research suggests that the ethnic-majority versus minority group status may influence overall levels of students' sense of school belonging, where the ethnic-majority group experiences a

greater sense of community or connectedness relative to the ethnic-minority groups in a given school (Goodenow, 1993b). Clearly, between-group differences in school belonging levels may have no bearing on school belonging and adjustment linkages. Nevertheless, an effective interpretation of patterns of school belonging relationships by ethnicity might require a comparison of studies that employ diverse samples, and a consideration of the effects of ethnic-majority versus minority-group status and age. Given that few studies sample sufficient ethnically diverse participants to conduct ethnic analyses, the influence of ethnicity on school belonging outcomes is inconclusive.

Age

Goodenow (19993a) observed a shift in the developmental impact of students' perceptions of their relationship to school whereby cross-sectional associations among components of school belonging, motivation, academic performance, and effort, decreased from 6th to 8th grade. The author proposed that students' perceptions of abilities may become less contingent on a sense of school belonging due to the assimilation of histories of success (or failure), changes in notions of adequate achievement, and a more internalized self-concept of abilities.

Klem and Connell (2004) found that urban, minority elementary students reporting less *teacher support* (i.e., a caring, structured classroom environment in which expectations are high and lucid) were more disengaged from school by such levels than middle school students. The authors concluded that this finding was likely due to students having only one teacher on whom they could rely to create a caring environment, compared with middle school students who interact with more than one teacher and classroom of peers. Middle school students were much more likely to be engaged (e.g.,

prepare for class, expend effort, pay attention, value school) with higher levels of teacher support than elementary students who experienced highly supportive teachers. Although Klem and Connell did not provide an explanation for the latter result, it is possible that teacher support declines during the middle school period, particularly for urban samples (due to such factors as class size). As such, the application of higher levels of support might serve as a welcome surprise that positively increases motivation. In a similar vein, it is possible that elementary school children are less engaged in the presence of higher levels of teacher support relative to middle school children because elementary-aged youth likely experience fairly high levels of support from teachers in general such that differences in support ranging from moderately high to very high would be less salient for most individuals. Finally, middle school students who reported higher levels of engagement were rated higher in academic achievement relative to elementary students. At this juncture, the literature provides little insight into whether age influences relationships between school belonging and adjustment in early to late elementary students.

Gender

Though some research indicates that gender differentially impacts linkages between school belonging and certain student outcomes, the exact influence of gender on specific outcomes in relation to school belonging may also interact with age. For example, students' sense of belonging has been found to have a greater impact on success expectancies and intrinsic value in school for girls relative to boys in mid-adolescent samples (Goodenow, 1993a; Goodenow & Grady, 1993), whereas research examining school belonging and school engagement in relation to achievement sampling late-

adolescents has not yielded such an effect for gender (Sanchez, Colon, & Esparaza, 2005; Sirin & Rogers-Sirin, 2005).

In relation to mental health and behaviors, Shochet and associates (2006) found that school belonging predicted anxiety symptoms one year later for girls, but not boys, controlling for previous levels of anxiety in sample of Caucasian, mid-adolescent participants. Perceptions of school belonging also predicted general functioning for boys, but not girls. The authors noted that feelings of support, acceptance, and being a part of the school environment might be particularly critical to girls in predictions of anxiety due to social evaluation concerns. In relation to the general functioning finding, they speculated that their measure of general functioning included a conduct scale that was particularly influenced by gender, where school belonging may have a particular effect on boys' externalizing behaviors. However, little research has examined mental health outcomes in pre-adolescent, urban minority students and specifically explored gender interactions; thus, the generalizability of gender linkages between school belonging and mental health found in investigations using older samples and Caucasian samples is unknown.

Current Study

The review of the literature suggests that students' adjustment to school is associated with students considering themselves to be a part of the school environment, perceiving that they are important to the school community and the school community is important to them, feeling that their needs will be met, and experiencing an emotional connection that binds them to the school community. Theoretically, when students experience a sense of community, they are more likely to internalize school values and

norms and perform prescribed behaviors such as cooperation, self-control, acceptance, and academic engagement. Such actions, in turn, elicit supportive and accepting behaviors in others and contribute to maintaining feelings of belonging. Some evidence, albeit scant, provides support that the linkages between school belonging and some indices of adjustment are likely bidirectional. The literature also suggests that overall levels of school belonging, as well as the strength of relationships between school belonging and adjustment, may be influenced by such variables as gender, grade, and ethnicity (ethnic-group majority versus minority status), though the exact direction of these effects is somewhat nebulous.

Nevertheless, school belonging investigations tend to be correlational and, in effect, convey little about how feelings of relatedness evolve over time, or about the predictive power of school belonging at a given point in time. Further, surprisingly few studies have examined school belonging in relation to mental health outcomes, particularly, with elementary students. Additionally, most previous research focuses on the outcomes of school belonging, rather than those factors that influence the extent to which students feel accepted, supported, respected, and a part of their academic institution. As such, the role that students' mental health, behaviors, and academic performance play in students' sense of school belonging remains unclear. Further, few studies have examined the effects of school belonging in urban, minority, elementary-aged students, though some evidence suggests that school belonging is an even stronger predictor of certain outcomes for ethnic minorities relative to Caucasian students (Goodenow & Grady, 1993). Indeed, the majority of such school belonging investigations involve Caucasian participants and or mid- to late-adolescents, in contrast with the present study sample. Thus, the question

remains as to whether extant evidence, particularly mental health findings, will extend to the current sample of 2nd and 5th grade students. Further, such a sample potentially provides insight into whether the levels, trends, and impact of school belonging differ between early and late elementary students. Broadly, the purpose of the current study was to investigate the linkages between students' sense of belonging and indices of adjustment, as well as school belonging trends in a sample of low-income, elementary-aged, minority students across one academic year.

Hypotheses

Based on the previously explicated theoretical and empirical research on students' sense of school belonging, the present study advanced four hypotheses and five exploratory questions:

I. Students' sense of school belonging would be higher among females relative to males.

II. Students' sense of school belonging would be higher among 2nd grade students compared with 5th grade students.

III. Students' sense of school belonging would be higher among African American students relative to Latino students given their predominance in the schools from which they were drawn.

IV. Students' sense of school belonging would be cross-sectionally associated with problem behaviors, social skills, self-concept, and academic competence.

Exploratory questions

Due to equivocal findings regarding a few of the phenomena this study intended to explore, several questions rather than a priori hypotheses were proposed.

I.   Would the significance of relatedness between students' sense of school belonging and adjustment vary by gender, ethnicity (i.e., ethnic-majority versus minority group status), and grade?

II.   Would levels of students' sense of school belonging decrease from the Fall to Spring semesters for 2nd and 5th grade urban, minority students?

III.   Would students' sense of school belonging in the Fall predict adjustment in the Spring (i.e., problem behaviors, social skills, achievement, self-concept, and academic competence) over and beyond previous levels of adjustment?

IV.   Would indices of adjustment in the Fall predict students' sense of school belonging in the Spring over and beyond previous levels of school belonging?

Method

Participants and Setting

The proposed study will analyze data derived from a broader longitudinal, primary prevention research program evaluating the outcomes of a multi-year, social and emotional curriculum conducted in an urban district in New Jersey. The district has been designated as an Abbott district by the state department of education, a term reserved for the poorest urban communities in which children are at statistically higher than average risk for problem behaviors, academic failure, and dropout. The community is predominately African American (~60%) with a rapidly growing Latino population (~30%).

Data from 410 2nd and 5th grade students were used in the analyses, drawn from twenty-three classes, spanning seven elementary schools. Demographic information was obtained from surveys completed by teachers. Only students for whom complete data were collected for Fall and Spring time points were included. Four students were removed because they were not African American or Latino. The mean age of participants was 10.22 (SD = .61); the majority of youth were ages 7 (40.3%) and 10 (28.7%). In terms of grade, 58.5% of the students were 5th graders and 41.5% were 2nd graders. The gender and ethnic composition of the sample was 54.1% girls, 45.6% boys, 81.5% African Americans and 18.3% Latinos. Approximately 80% of the participants qualified for reduced or free lunch, an index of low-socioeconomic status; 20% did not qualify for lunch benefits.

Measures

Students' Sense of School Belonging

Due to time constraints, students' sense of school belonging was assessed using a modified version of the original 18-item Psychological Sense of School Membership self-report measure (PSSM; Dahlberg, Toal, & Behrens, 1998). The modified, unidimensional instrument (5-items) measures "the extent to which students feel personally accepted, respected, included, and supported by others in the school social environment" (Goodenow, 1993b, p. 80). Student responses may range from "strongly disagree" (1) to "strongly agree" (4). Scale items are: (1) I feel proud of belonging to my middle school; (2) I am treated with as much respect as other students; (3) I feel very different from most other students here; (4) The teachers here respect me; and (5) There's at least one teacher or other adult in this school I can talk to if I have a problem." Scores are generated by summing across items after appropriate items are reverse coded; scores can range from 4 to 20, with higher scores indicating a higher sense of school belonging. Prior research indicates that the PSSM has adequate internal consistency for the original and modified versions ranging from .80 to .88 (Goodenow, 1993b; Murdock & Bolch, 2005) with Caucasian suburban and urban minority samples. In the present study, the internal reliability was .58 in the Fall, and .61 in the Spring. Scale stability from Fall to Spring was modest, $r = .25$.

Problem Behaviors and Social Skills

Teachers completed the Social Skills Rating System Survey (SSRS-T; Gresham & Elliott, 1990), a 57-item teacher report measure, for each student in their classes. The SSRS-T is an instrument that identifies the extent to which youth demonstrate social and academic competence, as well as problem behaviors, and includes three scales that assess social skills, problem behaviors, and academic competence. Due to time constraints, a

modified version of the SSRS-T (30-items), including only those items loading most

highly on their respective subscales, was utilized. The refined measure sub-scales were

highly correlated with the original sub-scale scores and full-scale scores ($.90 < r < .94$).

 Problem behaviors. The SSRS-T Problem Behaviors scale is comprised of three

sub-domains: externalizing problems (e.g., verbal or physical aggression towards others,

poor anger regulation, arguing), internalizing problems (e.g., anxiety, sadness, loneliness),

and hyperactivity problems (e.g., interrupts, easily distractible, excessive movement),

which yield a total of 12 items, 4 per subscale (see Appendix). The instructions directed

teachers to record the overall frequency with which students performed specific behaviors

over the past month or two, with individual items rated as "never" (0), "sometimes" (1), or

"very often" (2). Teachers were to report externalizing behaviors including, for example,

how often the student "talks back to adults" and "argues and fights with others."

Additionally, teachers completed surveys of internalizing symptoms including how often

the student "acts sad or depressed" and "appears anxious in groups." Finally, hyperactivity

items were completed including how often the student "is easily distracted" and "fidgets

or moves excessively." Problem behavior scores are generated by summing the relevant

items for each subscale.

 Social skills/competence. The SSRS-T social skills domain assesses prosocial

behaviors via three sub-scales encompassing cooperation (e.g., demonstrates helping and

sharing behaviors, and adheres to class rules), assertion (e.g., responds to others) and self-

control (e.g., appropriately responds to conflicts) (see Appendix). Teachers rated the

frequency with which each student demonstrated described behaviors as "never" (0),

"sometimes" (1), or "very often" (2). Sample items for cooperation, assertion, and self-

control are, "keeps desk clean and neat without being reminded," "initiates conversations with peers," and "responds appropriately when pushed or hit by other children," respectively. Social skills scores are generated by summing the relevant items for each subscale.

For the SSRS-T, Gresham and Elliot (1990) reported coefficient reliabilities ranging from .78 to .95. Specifically, for the Social Skills and Problem Behaviors scales, coefficient alphas were .94 and .88, respectively. Gresham and Elliot (1990) reported a 4-week test-retest correlation of .85 for Social Skills and .84 for Problem Behaviors skills. For the present study, the coefficient alphas were excellent for the Fall and Spring for Social Skills (.94 and .93) and Problem Behaviors (.92 and .92), with a strong 6-month stability ($r = .73$, Social Skills; $r = .72$, Problem Behaviors).

Academic competence. The SSRS-T Academic Competence scale assesses overall academic functioning. Teachers rated each student in their classes on a 5-point scale based on percentages (1 = lowest 10%, 2 = next lowest 20%, 3 = middle 40%, 4 = next highest 20%, 5 = highest 10%). The scale items encompass overall academic performance, reading and mathematic skills, academic motivation, parental support, and overall classroom behavior (see Appendix). Sample items include, "Compared to other children in my classroom, the overall academic performance of this child is..." and "This child's overall motivation to succeed academically is..." The coefficient alpha reported by Gresham and Elliot (1990) was .95 for the Academic Competence scale, with a 4-week test-retest correlation of .93. In the present study, the coefficient alpha was .91 for both time points, with a strong 6-month stability *($r = .78$).*

Students' report card grades for reading and math were averaged to obtain an

overall indicator of academic performance at each assessment point. Teachers evaluated each student on a 13-point letter grade scale, which was converted into a numerical scale for statistical purposes (i.e., A+ [4.5], A [4.0], A- [3.67], B+ [3.5], B [3.0], B- [2.67], C+ [2.5], C [2.0], C- [1.67], D+ [1.5], D [1.0], D- [.67], and F [0]).

Self-concept/Self-esteem

Students completed a modified version of the Piers-Harris (PH) Children's Self-Concept Scale (Piers & Harris, 1984), which was standardized on children and adolescents ranging in ages of 8 to 18 with at least a third grade reading ability. The original measure contains 80 items rated yes or no. Six subscales yield an overall self-concept score: (1) positive behavior (e.g., "I am a good person"), (2) intellectual and school status (e.g., "I have good ideas"), (3) physical appearance and attributes (e.g., "I am good looking"), (4) low anxiety (e.g., "I am often afraid"), (5) popularity (e.g., "My classmates make fun of me"), and (6) happiness and satisfaction (e.g., "I am a happy person"). The modified version of the PH that was utilized in the proposed study consists of 44 items, adjusted to include the same subscales as the original while eliminating cross-loading items. Psychometric analyses of the revised composite score revealed that it is highly reliable ($r =. 86$) and stable over a 6-month period ($r = .73$) (Dilworth, Mokrue, & Elias, 2002; Elias, Beier, & Gara, 1989). In the present study, coefficient alphas were .88 (Fall) and .86 (Spring), with moderate 6-month stability ($r = .59$).

Procedures

Teacher and student surveys were administered in the Fall and Spring of 2000-2001 as a part of the pre- and post-test assessment battery for a longitudinal social and emotional development and problem behavior prevention research project. The same

procedures were used for students in 2nd and 5th grades. Prior to the onset of data collection, an IRB-approved letter from the Superintendent informed parents of the project's content, objectives, and level of student involvement. Parents were provided with an "opt-out" option, where they could call or return a signed consent form if they did not want their child to participate in the evaluation component of the study.

Trained, undergraduate research assistants administered study surveys to the students in each class. Research assistants read the instructions to the students; survey items were also read aloud, while providing ample time between items for the children to enter responses. Research assistants clarified words that were anticipated to be difficult for some of the children and gave participants the opportunity to inquire into words or concepts they did not fully understand. Project research assistants provided teachers with the SSRS-T and a demographic form to complete for each student in their classes. When teachers completed surveys of the students' behavior, they also documented the gender, grade level, age, and ethnicity of each student in their respective classes, based on information collected by the central administration office and provided to the teachers as part of their class lists. They completed these assessments outside of school time and were compensated appropriately.

Results

Descriptive Statistics

Prior to conducting the primary analyses, preliminary statistical tests with focal variables were executed, assessing the means and standard deviations (Table1), normality of distributions, overall differences on study variables by demographics (Tables 4 and 5), and the degree of relatedness among focal variables in the Fall (T1) and Spring (T2) (Tables 2 and 3). All of the skewness coefficients ranged between -2.0 and +2.0; thus, variables were considered sufficiently normal and transformations deemed unnecessary. Descriptive statistics indicated that, on average, students tended to "agree" and "strongly agree" with items assessing a positive sense of school belonging, reporting high levels of school belonging in the Fall (M = 15.75, SD = 2.82) and Spring (M = 15.53, SD = 3.08), with 20 constituting the maximum possible score. On average, teachers rated students as exhibiting average levels of overall problem behaviors at T1 (M = 10.06, SD = 8.82) and T2 (M = 11.13, SD = 9.23), and social skills at T1 (M = 41.16, SD = 18.10) and T2 (M =.63, SD = 14.30). The average student was rated as slightly lower than average in academic competence at T1 (M = 24.05, SD = 7.90) and T2 (M = 24.95, SD = 7.68) compared with the normed sample. The average student grade for math and reading aggregated at each time point was in the "C+" to "B-" range. Finally, students reported above average levels of self-concept at T1 (M = 79.20, SD = 6.77), and T2 (M = 79.68, SD = 7.68) relative to the normative group on which the scale was standardized.

Four sets of three-way between-groups analysis of variance were conducted for T1 (Table 4) and T2 (Table 5) to examine the effects of demographic variables (i.e., gender, ethnicity, and grade) on adjustment outcomes. There were significant main

effects for gender ($F(1,400) = 6.73$, $p < .05$) and ethnicity ($F(1,400) = 5.36$, $p < .05$), as teachers perceived boys as exhibiting higher levels of problem behaviors (M = 11.49, SD = 8.85) than girls (M = 8.88, SD = 8.65), and African Americans as exhibiting higher levels of problem behaviors (M = 10.50, SD = 9.01) than Latinos (M = 8.12, SD = 7.70) at T1. Similar effects for gender ($F(1,401) = 4.26$, $p < .05$) and ethnicity ($F(1,401) = 16.55$, $p < .001$) were yielded at T2 with boys (M = 12.68, SD = 9.52) and African Americans (M = 11.84, SD = 9.43) perceived as demonstrating higher problem behaviors than their demographic counterparts (M = 9.78, SD = 8.79; M = 7.84, SD = 7.54, respectively). Additionally, there was a significant main effect for grade at T2 ($F(1,401) = 4.95$, $p < .05$), as teachers rated 2nd graders as displaying more problem behaviors (M = 11.77, SD = 8.82) than 5th graders (M = 10.17, SD = 9.74). None of the interaction effects for either time point reached significance.

 With social skills as the dependent variable, significant effects also emerged for gender ($F(1,367) = 14.33$, $p < .001$), ethnicity ($F(1,367) = 9.10$, $p < .01$), and grade at T1 ($F(1,367) = 4.28$, $p < .05$), indicating that females demonstrated more social skills (M = 44.30, SD = 13.75) than boys (M = 37.33, SD = 15.22), Latinos demonstrated more social skills (M = 44.94, SD = 12.85) than African Americans (M = 40.23, SD = 15.14), and 5th grade students demonstrated more social skills (M = 44.38, SD = 16.22) than 2nd grade students (M = 39.74, SD = 13.74) according to teacher reports. Similar effects were also yielded for gender ($F(1,392) = 5.89$, $p < .05$), ethnicity ($F(1,392) = 22.64$, $p < .001$), and grade ($F(1,392) = 6.64$, $p < .05$) at T2, with girls (M = 44.08, SD = 13.08), Latinos (M = 47.42, SD = 12.56), and 5th graders (M = 45.75, SD = 15.03) demonstrating significantly higher levels of social skills than their demographic counterparts (M =

38.61, SD = 14.72; M = 40.30, SD = 14.36; M = 40.16, SD = 13.60, respectively). Effects for demographic interactions were not significant.

For academic competence, analyses revealed a significant gender x grade interaction effect for T2 ($F(1,396) = 5.40$, $p < .05$), such that 2nd grade females were perceived by teachers as higher in academic competence (M = 26.09, SD = 7.87) than their male counterparts (M = 22.73, SD = 6.89). Significant effects for ethnicity ($F(1,396) = 6.27$, $p < .05$) and grade ($F(1,401) = 4.01$, $p < .05$) also emerged at T2 with Latinos (M = 26.21, SD = 6.76) and 5th graders (M = 25.48, SD = 7.70) rated as higher in academic competence than their demographic counterparts (M = 24.67, SD = 7.86; M = 24.58, SD = 7.62, respectively). No other main or interaction effects were yielded for T1 or T2 academic competence. Finally, demographic effects for analysis of variance tests did not reach significance in relation to student reports of self-concept for either time point.

The interelationships among indices of adjustment were examined using Pearson's product moment correlation analyses and are reported in Tables 2 and 3. Social skills, academic competence, and self-concept were significantly and positively related, and inversely related to problem behaviors at both time points. Given the moderate to high significant and positive correlations among the problem behaviors subscales (i.e., externalizing behaviors, internalizing behaviors, hyperactivity), social skills subscales (i.e., cooperation, assertion, self-control), and self-concept subscales (i.e., behavior, intellectual and school status, physical appearance and attributes, anxiety, popularity, happiness and satisfaction), full-scale scores were utilized in all analyses. Similarly, reading and math scores were highly correlated, and moderately associated with

academic competence; thus, academic competence was utilized as a proxy for academic achievement for the primary analyses.

Primary Analyses

Overall Differences in Levels of School Belonging by Grade, Gender, and Ethnicity

A three-way between-groups analysis of variance was conducted at T1 and T2 (Table 6) to assess hypotheses: (1) Students' sense of school belonging would be higher among females relative to males; (2) Students' sense of school belonging would be higher among 2nd grade students compared with 5th grade students; and (3) Students' sense of school belonging would be higher among African American students relative to Latino students given their predominance in the schools from which they were drawn. Partially consistent with expectations, the ANOVA assessing differential levels of self-reported school belonging by grade, ethnicity, and gender indicated significant main effects for gender ($F(1,396) = 5.67$, $p < .05$) at T1, with females reporting a significantly higher mean (M = 16.13, SD = 2.65) than males (M = 15.29, SD = 2.96). Nevertheless, the effect size was small (partial eta squared=.01). Similarly, gender yielded a main effect at T2 ($F(1,398) = 5.74$, $p < .05$) with girls reporting significantly higher school belonging (M = 15.94, SD = 2.70) compared with boys (M = 15.06, SD = 3.44; partial eta squared = .01). Unexpectedly, main effects in overall levels of school belonging by grade and ethnicity were not yielded at T1 or T2. None of the interaction terms were significant at T1 or T2.

Cross-sectional Relationships Between School Belonging and Adjustment

To assess hypothesis: (3) Students' sense of school belonging would be cross-sectionally associated with problem behaviors, social skills, self-concept, and academic

competence, Pearson's product moment correlation analyses were employed separately

for T1 and T2 and are reported in Tables 2 and 3. As expected, school belonging in Fall

was significantly and inversely related to problem behaviors ($r = -.15$, $p < .01$) and

positively related to social skills ($r = .22$, $p < .01$), academic competence ($r = .10$, $p <$

$.05$), and self-concept ($r = .31$, $p < .01$); the degree of association was low to moderate.

Similarly, school belonging in the Spring was significantly and negatively related to

problem behaviors ($r = -.20$, $p < .01$), and positively associated with social skills ($r = .21$,

$p < .01$), academic competence ($r = .20$, $p < .01$), and self-concept ($r = .30$, $p < .01$).

Influence of Demographics on School Belonging and Adjustment Linkages

Hierarchical regression analyses were employed to assess the second exploratory

question: would the significance of relatedness between students' sense of belonging and

adjustment vary by gender, ethnicity, and grade? The first set of regressions constituted

data reduction analyses conducted for each time point. The power of school belonging to

account for adjustment over and beyond demographic variables was assessed. Four sets

of analyses were conducted predicting each adjustment outcome (i.e., problem behaviors,

social skills, academic competence, and self-concept) at each time point. Gender,

ethnicity, and grade were entered at step one. At step 2, T1 school belonging was entered.

Once school belonging was determined to explain variance in a specific

adjustment index (e.g., problem behaviors) over and beyond step one, any demographic

variable that also uniquely explained variance in that adjustment index was examined in

the next set of analyses in interaction with school belonging in relation to that particular

outcome. Thus, the second set of analyses examined interactions between unique

demographic predictors and school belonging in relation to outcome variables for which

significant variance was accounted for by that demographic variable in prior analyses. At step one, one demographic variable (e.g., gender) and T1 school belonging were entered. At step two, a T1 school belonging x demographic variable interaction was entered (e.g., T1 school belonging x gender).

Results for the first series of analyses indicated that T1 school belonging added a significant increment to the model explaining T1 problem behaviors ($\Delta R^2 = .02$, $F(1,398) = 5.89$, $p < .01$), with gender ($B = .15$, $t = 3.04$, $p < .01$), ethnicity ($B = -.11$, $t = -2.35$, $p < .05$), and T1 school belonging ($B = -.13$, $t = -2.72$, $p < .01$) accounting for unique variance in total problem behaviors. Similarly, T2 school belonging predicted T2 problem behaviors over and beyond demographic variables ($\Delta R^2 = .03$, $F(1,401) = 11.47$, $p < .001$), with gender ($B = .15$, $t = 3.19$, $p < .01$), ethnicity ($B = -.19$, $t = -3.99$, $p < .001$), grade ($B = -.11$, $t = -2.35$, $p < .05$), and school belonging ($B = -.18$, $t = -3.85$, $p < .001$) emerging as unique predictors.

Regression analyses also indicated that T1 school belonging added a significant increment explaining T1 social skills ($\Delta R^2 = .04$, $F(1,365) = 14.45$, $p < .001$), with gender ($B = -.23$, $t = -4.68$, $p < .001$), ethnicity ($B = .16$, $t = 3.26$, $p = .001$), grade ($B = .16$, $t = 3.34$, $p = .001$), and school belonging ($B = .21$, $t = 4.27$, $p < .001$) emerging as unique predictors. Reports of school belonging in the Spring also contributed a unique increment to explaining T2 social skills ($\Delta R^2 = .04$, $F(1,392) = 15.59$, $p < .001$), with gender ($B = -.19$, $t = -3.91$, $p < .001$), ethnicity ($B = .22$, $t = 4.68$, $p < .001$), grade ($B = .15$, $t = 3.23$, $p = .001$), and school belonging ($B = .19$, $t = 4.04$, $p < .001$) emerging as unique predictors.

T1 school belonging did not predict T1 academic competence over and beyond demographic variables ($\Delta R^2 = .01$, $F(1,380) = 3.11$, $p > .05$). In contrast, T2 school belonging added a significant increment of explained variance to step one ($\Delta R^2 = .03$, $F(1,396) = 6.43$, $p < .001$). Unique variance was accounted for by gender ($B = -.11$, $t = -2.11$, $p < .05$), ethnicity ($B = .10$, $t = 2.06$, $p < .05$), and school belonging ($B = .19$, $t = 3.76$, $p < .001$).

Finally, regression analyses indicated that T1 school belonging brought the model predicting T1 self-concept to significance ($\Delta R^2 = .10$, $F(1,393) = 11.15$, $p < .001$), and emerged as the sole predictor ($B = .31$, $t = 6.46$, $p < .001$). Similarly, T2 school belonging brought the model explaining self-concept to significance ($\Delta R^2 = .09$, $F(1,400) = 11.05$, $p < .001$) reported at T2 ($B = .31$, $t = 6.46$, $p < .001$).

In the second set of analyses, hierarchical regressions assessed demographic moderators of school belonging and adjustment associations suggested by the previous analyses. In total, 13 regression analyses were conducted. A Bonferroni adjustment was applied to control for family-wise Type I error; thus, a stringent p-value of .003 was applied. The interactions between T2 school belonging and gender significantly predicted T2 social skills ($\Delta R^2 = .01$, $F(1,393) = 11.64$, $p = .03$) and T2 academic competence ($\Delta R^2 = .02$, $F(3,397) = 9.71$, $p = .003$). In addition, the interaction between T2 school belonging and gender was significant ($\Delta R^2 = .01$, $F(3,402) = 9.82$, $p = .03$). However, none of the previously presented interactions met the criterion for significance when the Bonferroni adjustment was applied to the alpha level.

School Belonging Trends Across the Academic year

A two-way repeated measures analysis of covariance was conducted to investigate

exploratory question (3): would sense of school belonging decrease from the Fall to

Spring semesters for 2nd and 5th grade urban minority students? School belonging was

entered as the repeated variable and grade as the between-group variable, with gender and

ethnicity as covariates. The effect of time was not significant [Wilks' Lambda=1.00,

$F(1,398) = .32, p > .05$], indicating that changes in school belonging levels from the Fall

to Spring semester did not reach significance for 2nd and 5th graders. There were no

significant interaction effects.

School Belonging as a Predictor of Adjustment

Four sets of hierarchical regression analyses were conducted to examine

exploratory question (4): would students' sense of school belonging in the Fall predict

Spring problem behaviors social skills, achievement, and self-concept, over and beyond

previous levels of adjustment? In the first step, gender, ethnicity, grade, and one T1

adjustment variable (e.g., T1 problem behaviors) were entered, followed by T1 school

belonging at step two. Similar regressions were computed for all of the remaining

outcome variables. The results indicated that T1 school belonging predicted T2 problem

behaviors ($\Delta R^2 = .01$, $F(1,397) = 96.08$, $p < .05$) over and beyond previous levels of

problem behaviors and demographic variables (Table 7). Predictors that uniquely

explained variance in problem behaviors were school belonging ($B = -07$, $t = -2.00$, $p <$

.05), T1 problem behaviors ($B = .70$, $t = 20.03$, $p < .001$), ethnicity ($B = -.11$, $t = -3.09$, p

$< .01$), and grade ($B = -.09$, $t = -2.55$, $p < .05$).

In the regressions assessing social skills (Table 8), academic competence (Table

9), and self-concept (Table 10), the results indicated that levels of school belonging

reported in the Fall did not significantly contribute to the model predicting Time 2 social skills ($\Delta R^2 = .00$, $F(1,360) = 81.60$, $p > .05$), academic competence ($\Delta R^2 = .00$, $F(1,374) = 102.65$, $p > .05$), or self-concept ($\Delta R^2 = .00$, $F(1,390) = 42.86$, $p > .05$) over and beyond control variables and previous levels of these variables. This was contrary to prediction.

Adjustment as a Predictor of School Belonging

Hierarchical regression analyses were utilized to assess the final exploratory question: will indices of adjustment in the Fall predict perceptions of students' sense of school belonging in the Spring over and beyond previous levels of school belonging? In the first step, demographics (i.e., gender, ethnicity, and grade) and T1 school belonging was entered. Next, T1 adjustment variables were entered at step two, to assess their ability to predict T2 school belonging, controlling for previous levels of school belonging and control variables. Given the high degree of correlation between problem behaviors and social skills ($r = -.74$, $p < .001$), separate analyses were conducted to obviate issues of multicollinearity. Thus, in the first regression, problem behaviors along with the remaining predictor variables (i.e., academic competence and self-concept) were entered at step two (Table 11). An identical analysis was conducted for regression two, with social skills entered at step two in lieu of problem behaviors (Table 12).

The first regression analysis indicated that adjustment variables significantly predicted T2 school belonging controlling for school belonging reported in the Fall and demographic variables ($\Delta R^2 = .02$, $F(3,370) = 6.14$, $p < .05$), consistent with predictions. Both problem behaviors ($B = -.13$, $t = -2.33$, $p < .05$) and previous school belonging uniquely predicted T2 school belonging ($B = .22$, $t = 4.17$, $p < .001$). In the second regression, adjustment also predicted T2 school belonging over and beyond the

contribution of covariates and previous levels of school belonging ($\Delta R^2 = .02$, $F(3,347) =$ 5.56, $p < .05$). Unique variance in T2 school belonging was accounted for by social skills ($B = .14$, $t = 2.21$, $p < .05$) and T1 school belonging ($B = .20$, $t = 3.68$, $p < .001$).

Discussion

Broadly, the primary purpose of the current study was to examine the mutual relationship between students' sense of school belonging and adjustment indices in a sample of low-income, elementary-aged, minority students across one academic year. More specifically, the study sought to explore the following objectives: (1) to examine differences in overall levels of school belonging by ethnicity, gender, and grade; (2) to examine cross-sectional relationships between school belonging and adjustment outcomes (i.e., problem behaviors, social skills, academic competence, and self-concept); (3) to assess whether patterns of associations between school belonging and adjustment vary by gender, ethnicity, or grade; (4) to investigate school belonging trends from the Fall to Spring of one academic year for 2nd and 5th graders; (5) to assess the power of school belonging in the Fall to predict adjustment in the Spring controlling for previous levels of adjustment; and, finally (6) to determine whether indices of adjustment in the Fall would predict school belonging levels reported in the Spring, over and beyond levels of belonging reported in the Fall.

Summary of Results

Students' sense of school belonging varied by gender; females reported significantly higher levels of school belonging than males in the Fall and Spring of one academic year. Overall levels of school belonging between African American and Latino elementary-aged students were not significantly different from each other at either time point. Similarly, early and late elementary students did not differ in reported levels of school belonging at either time point. Cross-sectional correlational analyses indicated that school belonging was inversely related to problem behaviors, and positively related to

social skills, self-concept, and academic competence, the degree of relatedness ranging

from modest to moderate in the Fall and Spring. This was also corroborated by data

reduction analyses indicating such linkages controlling for demographic variables.

Students' sense of school belonging as reported in the Fall and Spring did not

significantly differ. Analyses examining the predictive power of school belonging yielded

a significant relationship between students' sense of school belonging and teacher ratings

of students' problem behaviors controlling for previous levels of problem behaviors and

demographics. However, students' sense of school belonging in the Fall was not related

to Spring teacher-rated social skills and academic competence, or student self-reports of

self-concept controlling for previous levels of such indices of adjustment and control

variables. Finally, Fall levels of teacher-reported problem behaviors and social skills

predicted students' experience of school belonging in the Spring, controlling for previous

levels of school belonging.

<div align="center">*Explanation of Current Results*</div>

Overall Differences in Levels of School Belonging by Grade, Gender, and Ethnicity

The first objective of the study was to examine whether students' sense of their

school as a community would vary in predicted directions according to gender, ethnicity,

or grade.

Grade. Consistent with expectations, boys and girls differed in the degree to

which they experienced school belonging, with girls reporting higher perceptions of

belonging within the school community relative to boys. This result is consistent with

previous evidence showing that female students tend to report higher levels of school

belonging compared with their male counterparts (e.g., Furrer & Skinner, 2003; Gest et

al., 2005; Hagborg, 1994; Thompson et al., 2006). It has been noted that girls' relative

interpersonal and academic competence relative to males likely contributes to their

greater sense of belonging in that they are better equipped to meet the purported

expectations of the standard academic environment (Hagborg, 1994). Indeed, the present

study findings lend support to the previous observation, as teachers perceived females to

be superior in academic competence and social skills compared with males.

Ethnicity. Based on previous findings, it was predicted that African American

students would experience higher levels of school belonging than Latinos given their

ethnic-group majority status in the schools from which they were derived. Contrary to

expectations, overall differences in levels of school belonging did not emerge by

ethnicity. This finding is inconsistent with evidence suggesting that ethnic majority-group

status in a given school is associated with school belonging (Goodenow, 1993b).

Nevertheless, such findings were obtained using middle school samples. It is possible that

the benefits of a higher sense of school belonging conferred to students attending schools

in which they are members of the ethnic-group majority do not emerge until later in

development. Alternatively, students in the current study reported higher levels of school

belonging than some research using urban, ethnic-minority youth (e.g., Goodenow,

1993b). As such, the present study participants might represent an atypical sample to

which previous finding might not apply. It is also possible that previous research has not

adequately understood the dynamic relationship between minority status and students'

sense of belonging.

Grade. Predicated on previous evidence suggesting that younger students

experience a greater sense of community than older students, it was posited that 2nd grade

students would report higher levels of school belonging than 5th grade students. Incongruent with expectations, younger and older elementary students did not differ in their school belonging self-reports, inconsistent with previous evidence (e.g., Gest et al., 2005; Thompson et al., 2006). However, as most previous research examines middle school youth, it is possible that observations of differences by grade, with youth experiencing declines in school belonging across development, can be attributed to individual and social developmental challenges related to middle and high school transitions (e.g., less intimacy with teachers; less autonomy; identity development; social, cognitive, and pubertal changes; higher academic demand and teacher expectations) (Eccles et al., 1993; Elias, 2001b). As such, it is possible that we should not expect to see differences in school belonging between early and late elementary students due to the relative absence of such complexities as children progress through primary school. Alternatively, restricted range as a result of the high levels of school belonging reported in the current study may have mitigated the detection of significant differences between groups. Additional investigations will be necessary to clarify whether differences in school belonging levels differ between younger and older elementary students.

Cross-sectional Relationships Between School Belonging and Adjustment

The second objective of the study was to examine whether previous cross-sectional findings of relationships between school belonging and indices of adjustment would be replicated in the current study analyzing such linkages separately for the Fall and Spring time points. Specifically, based on prior research, it was hypothesized that students' sense of school belonging would be inversely related to problem behaviors, and positively related to social skills, academic competence, and self-concept in cross-

sectional analyses. Consistent with hypotheses, students' sense of school belonging was inversely related to the composite measure of problem behaviors, converging on previous research (Battistich & Hom, 1997; Bond et al., 2007; Loukas et al., 2006; Murray & Greenberg, 2000; Shochet et al., 2006). Additionally, support emerged for the prediction that school belonging would positively relate to social skills, academic competence, and self-concept. Indeed, prior empirical work demonstrates that students who perceive themselves as belonging in the school environment tend to demonstrate greater interpersonal dexterity (e.g., Hagborg, 1994; Voisin et al., 2005) academic competence (Goodenow, 1993a; Klem & Connell, 2004; Murray & Greenberg, 2000; Sirin & Rogers-Sirin, 2005), and self-concept (e.g., Hagborg, 1994), although nothing can be inferred about the direction of these associations.

Influence of Demographics on School Belonging and Adjustment Linkages

The third objective of the present study aimed to examine the role of demographic variables in linkages between school belonging and problem behaviors, social skills, academic competence, and self-concept. Given the equivocal nature of findings on the moderating effects of gender, ethnicity, and age on school belonging correlates, and the predominate focus on middle school students, no a priori hypotheses were advanced explicating the expected pattern of such effects in early and late elementary students.

Though gender, ethnicity, and grade, or a combination thereof, uniquely explained variance in the majority of adjustment indices along with school belonging at each time point, none of the demographic variables significantly interacted with school belonging in explaining variance in adjustment outcomes. The results suggest that the patterns of

relatedness between school belonging and adjustment do not differ between the examined demographic sub-groups in urban elementary school samples.

It is possible that the use of a multi-dimensional measure of school belonging in which specific indices of school belonging (e.g., peer acceptance, teacher support, engagement) would have clarified the influence of demographic variables on belonging effects. For example, when examining specific scales of relatedness or belongingness to specific social partners (e.g., teachers, peers, parents) in 3rd-6th grade Caucasian students, it was found that the independent impact of peer and teacher relatedness on boys' behavioral and emotional engagement was stronger relative to girls. In another study sampling 6th-8th graders, a sense of school belonging (i.e., teacher support, peer support, belonging/alienation) had a greater impact on academic success expectancies for girls and appeared to be, in part, a result of higher perceptions of teacher support (Goodenow, 1993a). Peer support predicted intrinsic value for boys, but not girls. An age effect also emerged, as a shift in the developmental impact of belonging was observed, whereby associations among school belonging components (with the exception of teacher support), motivation, academic performance, and effort, decreased from 6th to 8th grade (Goodenow, 1993a). The results imply that the influence of contextual factors may be more critical to 6th than 8th graders.

Thus, nuances in patterns of school belonging effects by specific demographics may have been elucidated by a more sensitive measure of school belonging. Nevertheless, few studies have examined the influence of demographic variables on patterns of linkages between school belonging and adjustment sampling younger and

older elementary students; as such, the effects of gender, ethnicity, and grade remain unclear.

School Belonging Trends Across the Academic Year

The fourth objective of the present investigation was to examine systematic changes in students' sense of community from the Fall to Spring semester of one academic year. Given the limited research examining trends in school belonging over time sampling early to late elementary, ethnic-minority, low-income students, no a priori hypothesis was posed. Though, some cross-sectional investigations imply that student reports of school belonging related indices decline over time (e.g., Klem & Connell, 2004), which has been corroborated by some longitudinal support (e.g., Anderman, 2003), little research has examined whether decrements in relatedness can occur across one academic school year. Interestingly, overall levels of school belonging did not differ at the two time points for the overall sample or by grade. This finding stands in contrast to one study that found 3rd, 4th, and 5th graders reported less social relatedness and liking school less in the Spring relative to the Fall (Gest et al., 2005). However, the previous study findings were derived from one elementary school in a rural working class community, and, as such, may not be generalizable to the current sample. Differences in results may also be attributed to variations in the operationalization of school belonging; further longitudinal research is required to clarify the nature of school belonging trends over one academic year for elementary students. The current results suggest that students in the 2nd and 5th grade felt a similar sense of belonging in the beginning and towards the end of the year. It is important to note that differences between 2nd and 5th graders were assessed via cross-sectional comparisons; thus, developmental trends in overall school

belonging across early to late elementary grades cannot be determined from the current

findings.

School Belonging as a Predictor of Adjustment

The fifth objective of the study was to extend most previous investigations

examining the relationships between school belonging and youth functioning at one time

point, by invoking a brief longitudinal design in an attempt to discern whether established

linkages would be sustained. Specifically, the current study sought to determine whether

school belonging levels reported by students in the Fall would predict Spring problem

behaviors, social skills, academic competence, and self-concept, over and beyond levels

of adjustment reported in the Fall. As scant research has examined the longitudinal

relationship between school belonging and criterion variables spanning psychological and

behavioral realms sampling African American and Latino early and late elementary

students, specific predictions regarding the precise nature of longitudinal relationships

assessed were omitted.

Problem behaviors. Results indicated that students who reported higher levels of

school belonging in the Fall exhibited fewer overall problem behaviors in the Spring

according to teacher reports, in comparison to students reporting lower levels of

belonging. This finding parallels longitudinal work yielding students' sense of school

community as a predictor of such problem behaviors as externalizing symptoms,

internalizing symptoms, and substance use (Bond et al., 2007; Loukas, Suzuki, & Horton,

2006; Hawkins et al., 2001; Shochet, Dadds, Ham, & Montague, 2006). The results lend

support to theoretical work proposing that belonging or relatedness is a fundamental

human psychological need, that, when insufficiently met, may negatively impact development (e.g., Baumeister & Leary, 1995; Maslow, 1943; Ryan, 1995).

The exhibition of problem behaviors yields cause for concern as research suggests that poor social and academic adjustment in elementary school is associated with negative functioning in later years (e.g., Masten et al., 2005; Verhulst, Koot, & Van der Ende, 1994). For example, Kupersmidt and Coie (1990) found that aggression in the 5th grade predicted delinquency and school withdrawal 7 years later. As such, it is notable that students who felt more connected to the school environment were less inclined to act out inappropriately or experience sadness in the school environment. The guiding model of students' sense of belonging and similar conceptualizations such as social control theory (Hirschi, 1969) and the social development model (Hawkins, Guo, Hill, Battin-Pearson, & Abbott, 2001) are bolstered by the current finding, which suggests that when the social environment cultivates strong feelings of attachment and commitment in constituents, behaviors that deviate from expectations such as aggression and emotional disinhibition are thwarted.

Social skills. The theories mentioned above also posit that when students feel a sense of belonging, they should be more likely to engage in positive behaviors (e.g., prosocial skills, academic compliance) when rules for expected behaviors are lucid and more skillful behaviors reinforced. For example, Baumeister and Leary (1995) theorized that when people have positive social connections and experience a sense of group membership, positive interpersonal indicators such as helping behaviors and empathy increase. Thus, it was surprising that student reports of school belonging in the Fall did not significantly predict their behaviors specifically pertaining to later social skills.

Moreover, such findings have been yielded cross-sectionally, though such designs may amplify the link between school belonging and specific outcomes. Once previous behaviors are controlled, such linkages may be attenuated.

Alternatively, it is possible that rules for expected *positive social behaviors* were neither especially lucid nor reinforced in the schools from which participants were derived, whereas prohibited behaviors and their negative consequences were more likely to be explicit. This is a common situation in many schools. Further, an increase in positive behaviors as a result of students' perceptions of belonging demands that reinforcement for and opportunities to perform such behaviors are in place. Youth must also have the knowledge to develop and strengthen social skills, which should be imparted and modeled by teachers and other adults in the school community. Thus, one might expect a positive relationship between school belonging and social competence in schools in which the values underpinning the school culture are clear and positive, and manifest in school policies and practices; but one would not expect such a link in the absence of such lucid values and procedures (McMillan & Chavis, 1986). For example, in a large scale implementation of the Child Development Program (CDP) developed to promote children's prosocial and cognitive development and increase students' sense of community in diverse elementary schools across the U.S. (Battistich, Solomon, Watson, & Schaps, 1997), students' sense of community was related to prosocial indices in experimental schools. However, students' sense of community was inversely related to prosocial outcomes in comparison schools and positively associated with perceptions of peers as competitive, suggesting that the cultural and school norms to which students

subscribe influence the effects of students' sense of belonging, which may be positive or negative.

However, given the fact that adjustment predicted later school belonging controlling for previous perceptions of belonging (further explicated below), it is more likely that the current study's failure to find a longitudinal link between school belonging and social skills is an indication that the construct operates as a preventive mechanism. In other words, school belonging may be effective in preventing problem behaviors, but it does not appear to promote such positive or protective behaviors such as social competence. Future research may find that the impact of school belonging is broader in schools with strong norms and expectations around prosocial behaviors, nonviolent conflict resolution, and mutual help and collaboration. As mentioned previously, it is also possible that methodological issues such as restricted range in school belonging, the use of a unidimensional measure of school belonging, in addition to less than desirable psychometric properties of the school belonging measure may have attenuated the link between school belonging and social skills over time.

Academic competence. Inconsistent with some previous research demonstrating, by and large, cross-sectional relationships between school belonging academic related indices, which were also substantiated by the cross-sectional findings of the current study, school belonging did not predict academic competence once previous levels were controlled. Indeed, prior research suggests that academic measures, particularly those that measure academic motivation (e.g., expectancy for success, intrinsic value in school, effort) strongly relate to students' sense of belonging (Goodenow, 1993a; Goodenow & Grady, 1993; Hagborg, 1998; Roesner et al., 1996), though such effects have been

equivocal when examining academic performance (Sanchez et al., 2005; Sirin & Rogers-Sirin, 2005; Voelkl, 1997). Nevertheless, the present results are consistent with longitudinal work with diverse elementary students that failed to find a link between students' sense of community and achievement (Battistich et al., 1997; Voelkl, 1997). Further investigations are needed to clarify the relationship between students' sense of school belonging and specific indices of academic behaviors (e.g., GPA, effort, academic expectancies).

Self-concept. In contrast with the current results, some longitudinal evidence suggests that students' sense of community is positively related to self-concept in elementary students (Battistich, Solomon, Kim, Watson, & Schaps, 1995). It important to highlight that in the current sample, on average, students' scored in the 97% percentile in self-reports of self-concept; as such, restricted range on that variable may have occluded the detection of significant effects. Alternatively, one's self-concept is derived from a number of factors including social and academic competence, and one's family environment (Dubois, Eitel, & Felner, 1994; Rutter, Maughan, Mortimore, Ouston, & Smith, (1979), and as such, it is possible that some other realm (e.g., family) may have better accounted for predictions of self-concept than school belonging for elementary students.

Summary of school belonging effects. Although one effect was yielded in the expected direction, the nature of the effect was rather weak. One interpretation is that students' sense of belonging is not a particularly important variable in elementary students' adjustment. Given previous findings, one might infer that school belonging emerges as an influential factor as youth reach early adolescence. Indeed, school

belonging has been hypothesized to become particularly important in adolescence as youth begin to formulate their identities, during which they may be particularly susceptible to positive or negative forces (Goodenow, 1993a). Developmental shifts including increases in self-consciousness and changes in relationships with peers and teachers place youth at a heightened risk for adjustment issues.

Nevertheless, studies examining the impact of school belonging programs on students' sense of community and correlates suggest that long-term interventions implemented during elementary grades are most effective, as early interventions appear to impact the developmental trajectory of youth, and late intervention may be too late, or may need to be delivered with too high a degree of intensity, to affect outcomes (Hawkins et al., 2001). Though the benefit of increased school belonging efforts targeting adolescents appear to be implicated by basic research, evidence suggests that early intervention may reduce the risk that typically accompanies transition to early adolescence. Hawkins and colleagues (2001) argue that it is the proclivity to bond and the engendering of the concept that school is a milieu with which one can bond that must take place, and both need to be cultivated during primary school. Thus, the predictive of power of school belonging may have become more apparent further along in the study participants' development.

Alternatively, the weak findings might also be attributed to the modified measure of students' sense of belonging. Though the measure appears to tap the concept of membership, influence, integration and fulfillment of needs, and an emotional connection, the instrument may not have adequately operationalized these important dimensions of students' perception of the school environment and how they are treated

within it. Further, it is important to note that the reliability of the current measure of students' sense of belonging may have attenuated the detection of the predictive power of school belonging in relation to social skills, academic competence, and self-concept.

Adjustment as a Predictor of School Belonging

The final objective of the present study was to examine whether behavioral and psychological adjustment in the Fall would predict students' sense of school belonging in the Spring, controlling for levels of school belonging reported in the Fall. This goal was based on primarily conceptual, but, also, empirical work suggesting that children's adjustment influences how the environment responds to them, which, in turn, contributes to their perceptions of being a part of and supported by the school environment. Given the paucity of research specifically examining behavioral and mental health antecedents of school belonging, particularly, at more than one time point, no a priori hypotheses were advanced.

Consistent with previous empirical work (Anderman, 2003; Gest et al., 2005), levels of adjustment in the Fall significantly contributed to the model explaining students' sense of school belonging the Spring, over and beyond previous levels of school belonging. Of the adjustment indices assessed (i.e., problem behaviors, social skills, academic competence, self-concept), problem behaviors and socials skills were the only variables outside of prior levels of students' sense of school belonging that uniquely accounted for variance in students' sense of belonging the Spring. The results are consistent with similar work suggesting that deficits in the social arena are also mirrored by students' perceptions of support and connection to the school environment (e.g., Asher & Coie, 1990). For example, Gest and colleagues (2005) found that students who

received higher scores of teacher rated aggression experienced later declines in their perceptions of several dimensions of social relatedness at school. Indeed, these results serve as an important counterpart to cross-sectional and longitudinal work examining school belonging as a precursor to students' adjustment.

These findings further support implicit and explicit suppositions of theories posited to explain the development of a sense of school belonging or community (e.g., Finn, 1989; Hawkins, Guo, Hill, Battin-Pearson, & Abbott, 2001, McMillan & Chavis, 1986; Wehlage, 1989). The results suggest that students' sense of their relationship with the school environment and adjustment outcomes, are, indeed, of a reciprocal nature, whereby students' behaviors also influence students' perceptions of their relationship to the school environment. Specifically, when students display more cooperation, self-control, and assertion in the beginning of the year, behaviors that are typically expected and reinforced in the school setting, members in the environment respond positively to them. In turn, children experience a relative increase in their sense of membership at school to a greater extent than students who exhibit less social competence in the earlier part of the academic year.

Conversely, the findings suggest that children who are rated by teachers as displaying higher levels of problem behaviors such as aggression and anxiety are responded to negatively, which likely explains reports of relative declines later in the school year. Skinner and Belmont (1993) found that student engagement in 3rd to 5th graders influenced teacher support, where teacher reports of students' academic and emotional engagement predicted teacher behaviors in the Spring semester. Apparently, teachers responded to students who were more behaviorally and emotionally engaged

with behaviors that would likely facilitate continued engagement (e.g., demonstrated more involvement and autonomy support) given that teacher behaviors also predicted student engagement. In contrast, students who were less engaged experienced teacher behaviors in the Spring that would likely perpetuate disengagement (e.g., more coercion, emotional neglect). The authors noted that teachers might avoid such youth and demonstrate other negative behaviors towards students with lower levels of engagement because of feelings of incompetence or assumptions that such students dislike them.

Implications

The findings suggest that school belonging plays a preventive role in emotional and behavioral adjustment in low-income, African American and Latino, early and late elementary students. More specifically, the current results coupled with prior research suggest that the implementation of school practices that bolster the degree to which students feel a sense of belonging to their school may mitigate the development of problematic behaviors that can lead to further impairments in psychological, behavioral, and academic functioning.

Extant research shows that intervention strategies that seem to influence school belonging include social-emotional, cognitive, and ethical competence curricula; giving students a voice (e.g., involving them in classroom decision-making); certain teacher training curricula (interactive classrooms, collaborative learning, developmentally appropriate disciplinary structure); fair policies; avoiding discrimination; high expectations from teachers and parents of student performance; culturally relevant curricula; a focus on self-efficacy; meaningful opportunities for and recognition of students; using a whole school approach; and utilizing a sustained intervention

(Battistich, Schaps, & Wilson, 2004; Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004; Comer, 2004; Hawkins, Guo, Hill, Battin-Pearson, & Abbott, 2001). Several promising approaches to improving students' sense of school belonging, school climate, and positive youth development include the Seattle Social Development Project (SSDP; Hawkins et al., 2001), Caring School Community (Child Development Project, CDP; Battistich et al., 2004), Tribes Learning Communities (OJJDP, n.d.), and Social Decision Making and Social Problem Solving (SDM-SPS; Elias & Bruene, 2005).

The present study also suggests that students' social and emotional competencies and problem behaviors influence the degree to which students feel connected to the school environment. These findings underscore the importance of emphasizing social-emotional curricula as a vehicle for increasing students' sense of belonging. Indeed, the vast majority of school belonging interventions incorporate strategies to enhance children's social and emotional competencies. The findings also suggest that when students' behaviors deviate from expectations, the environment responds in such a manner as to perpetuate, or, more accurately, decrease students' feelings of belonging in the school environment. Thus, developing students' social and emotional skills are not only important insofar as they increase students' sense of belonging, but also because they serve to create a positive school climate in which students who *are* demonstrating problem behaviors would be better supported in improving their connection with school rather than being further alienated from it. Additionally, teachers and other adults in the academic environment must be trained in applying methods that do not reinforce students' negative behaviors and feelings of alienation.

The present results lend support to the current conceptualization of students' sense of belonging, in addition to most posited school belonging models. Students who perceive a greater sense of school community are more likely to internalize and exhibit healthy models of behavior. In effect, their behaviors influence the degree of support, respect, and acceptance they receive and, in turn, experience in the school environment. It is noteworthy that in a poor urban district in which the majority of the students qualify for lunch status, students reported high levels belonging, on average, suggesting that the majority of the sample felt valued, respected, and supported in the school environment. Previous evidence suggests that students' sense of community in urban schools tends to pale relative to suburban schools and schools with students from wealthier families (Goodenow, 1993b; Thompson et al., 2006). However, this clearly is not uniformly the case.

<div align="center">*Suggestions for Future Research*</div>

The literature denotes the positive effects of school belonging despite varying definitions, conceptualizations, measurements, and terms. Nevertheless, it is also evident that, at times, such variations reduce the interpretability of results. Further, some investigators examine the independent contributions of one or several school belonging subscales, while others collapse subscales, (though, some examine both) making comparisons across studies challenging. Thus, the developmental implications of changes in overall levels versus specific indices of school belonging and the effects of group differences along such dimensions remain somewhat unclear. In addition, despite the extensive cross-sectional research on school belonging correlates, longitudinal investigation are scant, particularly those that focus on low-income, ethnic minority, early

to late elementary students. Further, few investigations examine mental health outcomes of school belonging. Finally, despite transactional conceptualizations of school belonging, explicit investigations examining the behavioral and psychological antecedents are wanting. Thus the school belonging area could be advanced in a number of ways.

First, the current study must be replicated and extended. Investigators should examine the evolution of the dynamic relationship between school belonging in relation to psychological and behavioral adjustment using longitudinal designs that span primary school through high school. It would be particularly important to include instruments assessing problem behaviors and positive behaviors (e.g., social competence, empathy) to further assess whether students' perceptions of school belonging primarily confers its benefits as a preventative construct, or as a construct that may also promote positive behaviors over time. Group differences in the patterns of the associations between school belonging and outcomes must also be examined.

Second, investigators should examine the independent effects of comprehensive, valid, and reliable school belonging indices in addition to an analysis of overall effects. Though a unidimensional construct assessing students overall sense of belonging might be a sufficient approach to determining outcomes in elementary school, the many changes that youth undergo as they approach adolescence may require a more nuanced method of elucidating the role of school belonging (Bond et al., 2006; McNeely & Falci, 2004). Further, the conceptual relationship between school belonging indices and student outcomes needs to be explicated from a developmental perspective.

Third, researchers need to assess the school culture or values to which students subscribe in addition to overall levels of school belonging. From a conceptual perspective, students' sense of community is only one piece of the puzzle in predicting adjustment; levels of school belonging will only relate to a spectrum of adjustment indices to the extent that students operate in a school culture that has lucid and positive norms (McMillan & Chavis, 1986).

Finally, a more restricted analysis examining youth that are above or below average in school belonging may have clarified the predictive power of school belonging. In particular, the identification of what constitutes "low" levels of school belonging might serve to elucidate whether certain school belonging cut-offs may be used as a diagnostic tool to identify youth who are in jeopardy of suffering impairments in social, psychological, and behavioral realms. Relatedly, investigations should examine the predictive power of school belonging by looking at specific trajectories of students' sense of their school as a community over time to assess whether specific patterns of belonging are more strongly associated with students' functioning.

APPENDIX

Social Skills Rating System – Teacher Form Listed by Subscales

Cooperation

Finishes class assignments within time limits
  Puts work materials or school property away
  Ignores peer distractions when doing class work
  Attends to your instructions

Self-control

Controls temper in conflict situations with peers
  Compromises in conflict situations by changing own ideas to reach agreement
  Controls temper in conflict situations with adults
  Cooperates with peers without prompting
  Responds appropriately when pushed or hit by other children

Assertion

Says nice things about himself or herself when appropriate
  Invites others to join in activities
  Initiates conversations with peers
  Volunteers to help peers with classroom tasks

Externalizing

Fights with others
  Threatens or bullies others
  Talks back to adults when corrected
  Gets angry easily

Internalizing

Has low self-esteem
  Appears lonely
  Shows anxiety about being with a group of children
  Acts sad or depressed

Hyperactivity
Is easily distracted
Interrupts conversations of others
Disturbs ongoing activities
Fidgets or moves excessively
Academic

Compared to other children in my classroom, the overall academic performance of this child is:
  In reading, how does this child compare with other students?
  This child's overall motivation to succeed academically is:
  This child's parental encouragement to succeed is:
  Compared with other children in my classroom this child's overall classroom behavior is:

Table 1. Descriptive Statistics for focal variables at T1 and T2.

Variables	Time 1				Time 2			
	N	Mean	SD	α	N	Mean	SD	α
School Belonging	405	15.75	2.82	.58	407	15.53	3.08	.61
Problem Behaviors	409	10.06	8.82	.92	410	11.13	9.23	.92
Social Skills	376	41.16	14.81	.94	400	41.63	14.30	.93
Academic Competence	391	24.05	7.79	.91	405	24.95	7.68	.91
Self-concept	401	79.20	6.77	.88	407	79.68	7.68	.66

Table 2: T1 intercorrelations among study subscales.

Variable	1	2	3	4	5
1. School Belonging	--				
2. Problem Behaviors	-.15 **	--			
3. Social Skills	.22 **	-.74 **	--		
4. Academic Competence	.10 *	-.34 **	.52 **	--	
5. Self-concept	.31 **	-.31 **	.32 **	.30 **	--

*p< .05, ** p< .01

Table 3: T2 intercorrelations among study subscales.

Variable	1	2	3	4	5
1. School Belonging	--				
2. Problem Behaviors	-.20 **	--			
3. Social skills	.21 **	-.87 **	--		
4. Academic Competence	.20 **	-.47 **	.54 **	--	
5. Self-concept	.30 **	-.31 **	.33 **	.34 **	--

p< .05, **p < .01

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Table 4. T1 analyses of variance of adjustment indices as a function of gender, ethnicity, and grade.

	Problem Behaviors	Social Skills	Academic Competence	Self-concept
Gender	$F(1,400) = 6.73$, $p<.05$	$F(1,367) = 14.33$, $p<.05$	$F(1,382) = 1.0$, $p>.05$	$F(1,392) = 1.88$, $p>.05$
Ethnicity	$F(1,400) = 5.36$, $p<.05$	$F(1,367) = 9.10$, $p<.05$	$F(1,382) = .04$, $p>.05$	$F(1,392) = .20$, $p>.05$
Grade	$F(1,400) = .60$, $p>.05$	$F(1,367) = 4.28$ $P<.05$	$F(1,382) = 3.34$, $p>.05$	$F(1,392) = .02$, $p>.05$
Gender x Ethnicity	$F(1,400) = .08$, $p>.05$	$F(1,367) = .00$, $p>.05$	$F(1,382) = .26$, $p>.05$	$F(1,392) = .41$, $p>.05$
Gender x Grade	$F(1,400) = .24$, $p>.05$	$F(1,367) = .05$, $p>.05$	$F(1,382) = 3.65$, $p>.05$	$F(1,392) = .18$, $p>.05$
Ethnicity x Grade	$F(1,400) = .04$, $p>.05$	$F(1,367) = .01$, $p>.05$	$F(1,382) = .04$, $p>.05$	$F(1,392) = .08$, $p>.05$
Gender x Ethnicity x Grade	$F(1,400) = .00$, $p>.05$	$F(1,367) = .35$, $p>.05$	$F(1,382) = .47$, $p>.05$	$F(1,392) = .05$, $p>.05$

Table 5. T2 analyses of variance of adjustment indices as a function of gender, ethnicity, and grade.

	Problem Behaviors	Social Skills	Academic Competence	Self-concept
Gender	$F(1,401) = 4.26$, $p<.05$	$F(1,392) = 5.89$, $p<.05$	$F(1,382) = .98$, $p>.05$	$F(1,398) = .00$, $p>.05$
Ethnicity	$F(1,401) = 16.55$, $p<.05$	$F(1,392) = 22.64$, $p<.05$	$F(1,382) = 6.27$, $p<.05$	$F(1,398) = .35$, $p>.05$
Grade	$F(1,401) = 4.95$, $p<.05$	$F(1,392) = 6.64$, $p<.05$	$F(1,382) = 4.01$, $p<.05$	$F(1,398) = 1.33$, $p>.05$
Gender x Ethnicity	$F(1,401) = .41$, $p>.05$	$F(1,392) = 1.12$, $p>.05$	$F(1,382) = .1.05$, $p>.05$	$F(1,398) = .05$, $p>.05$
Gender x Grade	$F(1,401) = 1.01$, $p>.05$	$F(1,392) = 3.24$, $p>.05$	$F(1,382) = 5.40$, $P<.05$	$F(1,398) = .94$, $p>.05$
Ethnicity x Grade	$F(1,401) = .50$, $p>.05$	$F(1,392) = .01$, $p>.05$	$F(1,382) = 1.35$, $p>.05$	$F(1,398) = .69$, $p>.05$
Gender x Ethnicity x Grade	$F(1,401) = .09$, $p>.05$	$F(1,392) = .61$, $p>.05$	$F(1,382) = .67$, $p>.05$	$F(1,398) = 2.57$, $p>.05$

Table 6. T1 and T2 analyses of variance of School Belonging as a function of gender, ethnicity, and grade.

	T1 School Belonging	T2 School Belonging
Grade	$F(1,396) = 3.12$, $p>.05$	$F(1,398) = .03$, $p>.05$
Gender	$F(1,396) = 5.67$, $p<.05$	$F(1,398) = 5.74$, $p<.05$
Ethnicity	$F(1,396) = .48$, $p>.05$	$F(1,398) = .07$, $p>.05$
Grade x Gender	$F(1,396) = 2.19$, $p>.05$	$F(1,398) = .00$, $p>.05$
Grade x Ethnicity	$F(1,396) = .75$, $p>.05$	$F(1,398) = .46$, $p>.05$
Gender x Ethnicity	$F(1,396) = .00$, $p>.05$	$F(1,398) = .38$, $p>.05$
Grade x Gender x Ethnicity	$F(1,396) = 1.10$, $p>.05$	$F(1,398) = .39$, $p>.05$

Table 7. Summary of hierarchical regression analyses for T1 School Belonging predicting T2 Problem Behaviors (N = 397).

Variable	B	$SE\ B$	β
Step 1			
Gender	1.00	.64	.06
Ethnicity	-2.48	.91	-.11**
Grade	-.50	.21	-.08
T1 Problem Behaviors	.75	.04	.71***
Step 2			
Gender	.85	.64	.05
Ethnicity	-2.51	.81	-.11**
Grade	-.54	.21	-.09*
T1 Problem Behaviors	.74	.04	.70***
T1 School Belonging	-.22	.11	-.07*

Note: R^2 = .54 for Step 1 ($p < .001$); ΔR^2 = .55 for Step 2 ($p < .05$)
*p<.05, **p<.01, ***p<.001

Table 8. Summary of hierarchical regression analyses for T1 School Belonging predicting T2 Social Skills (N = 366).

Variable	B	SE B	β
Step 1			
Gender	-1.33	1.08	-.05
Ethnicity	3.74	1.33	.10**
Grade	.58	.36	.06
T1 Social Skills	.67	.04	.69***
Step 2			
Gender	-1.26	1.08	-.04
Ethnicity	3.82	1.33	.11**
Grade	.64	.36	.07
T1 Social Skills	.66	.04	.68***
T1 School Belonging	.22	.19	.04

Note: R^2 = .53 for Step 1 (p <.001); ΔR^2 = .53 for Step 2 (p>.05)

*p<.05, **p<.01, ***p<.001

Table 9. Summary of hierarchical regression analyses for T1 School Belonging predicting T2 Academic Competence (N = 380).

Variable	B	SE B	β
Step 1			
Gender	-.48	.52	-.03
Ethnicity	1.84	.66	.10**
Grade	.01	.18	.00
T1 Academic Competence	.74	.03	.75***
Step 2			
Gender	-.39	.52	-.03
Ethnicity	1.83	.66	.10**
Grade	.03	.18	.01
T1 Academic Competence	.73	.03	.75***
T1 School Belonging	.12	.10	.04

Note: R^2 = .58 for Step 1 (p <.001); ΔR^2 = .58 for Step 2 (p>.05)

*p<.05, **p<.01, ***p<.001

Table 10. Summary of hierarchical regression analyses for T1 School Belonging predicting T2 Self-concept (N = 396).

Variable	B	SE B	β
Step 1			
Gender	.58	.53	.05
Ethnicity	-.63	.68	-.04
Grade	.08	.18	.02
T1 Self-concept	.57	.04	.60***
Step 2			
Gender	.53	.53	.04
Ethnicity	-.63	.66	.04
Grade	.07	.18	.02
T1 Self-concept	.58	.04	.60***
T1 School Belonging	-.07	.10	-.03

Note: R^2 = .35 for Step 1 (p <.001); ΔR^2 = .36 for Step 2 (p >.05)

*p<.05, **p<.01, ***p<.001

Table 11. Summary of hierarchical regression analyses for adjustment variables predicting T2 School Belonging (N = 377).

Variable	B	$SE\ B$	β
Step 1			
Gender	-.55	.30	-.09
Ethnicity	-.25	.38	-.03
Grade	.08	.10	-.04
T1 School Belonging	.27	.06	.25***
Step 2			
Gender	-.40	.31	-.07
Ethnicity	-.34	.38	-.05
Grade	-.10	.10	-.05
T1 School Belonging	.24	.06	.22***
T1 Self-Concept	.00	.02	.01
T1 Academic Competence	.02	.02	.06
T1 Problem Behaviors	-.05	.02	-.13*

Note: R^2 = .08 for Step 1 ($p <.001$); ΔR^2 = .02 for Step 2 ($p<.05$)

*p<.05, **p<.01, ***p<.001

Table *12. Summary of hierarchical regression analyses for adjustment variables predicting T2 School Belonging (N = 355).*

Variable	B	SE B	β
Step 1			
Gender	-.62	.31	-.10
Ethnicity	-.16	.39	-.02
Grade	.-.10	.11	-.05
T1 School Belonging	.26	.06	.24***
Step 2			
Gender	-.42	.32	-.07
Ethnicity	-.32	.40	-.04
Grade	-.15	.11	-.07
T1 School Belonging	.22	.06	.20***
T1 Self-concept	.01	.03	.03
T1 Social Skills	.03	.01	.14*
T1 Academic Competence	.00	.02	-.01

Note: R^2 = .08 for Step 1 ($p <.001$); ΔR^2 = .02 for Step 2 ($p<.05$)

*p<.05, **p<.01, ***p<.001

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