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Educating At-Risk Urban African American Children:  
The Effects of School Climate on Motivation and Academic Achievement

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Abstract

Research on the processes relating school climate factors to student motivation and academic performance is sparse, especially for urban African American students placed at risk. The present study examines the mediating effects of student intrinsic motivation and teacher ratings of student academic engagement on the relation between school climate perceptions and student academic performance among 282 urban African American middle school students. Results provided support for the hypothesized model and suggest the importance that a school environment that the students find fair and enjoyable has on academic engagement among urban students placed at risk. Results also suggest the important role that teachers play in establishing such a climate.

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*Objectives*

Over the past ten years much research (e.g., Furrer & Skinner, 2003; Roeser, Midgley, & Urdan, 1996; Wigfield & Eccles, 2000) has examined student motivational processes and academic achievement in the context of school climate characteristics at the classroom and school level in order to better understand the contextual and motivational factors that contribute to student academic engagement and performance. The present study builds on the approach of Roeser et al. (1996) to understand the relationships of school context and student motivational factors to academic engagement and achievement among urban African American middle school students placed at-risk.

Although there is a growing amount of literature documenting the effects of school-level factors on academic achievement (Eccles, Wigfield, & Schiefele, 1998; Roeser et al., 1996; Ryan & Patrick, 2001), few studies have examined how school climate affects urban African American students. More research is needed that examines the effects of climate factors on academic engagement among African American students, who consistently lag behind majority white children in measures of academic performance (National Center for Educational Statistics, NCES, 2004a, 2004b). In the present study, then, urban middle school students' self-perceived intrinsic or mastery motivation for school work and teachers' assessments of students' levels of engagement in academic learning will be examined as mediators of the relation of students' school climate perceptions to their academic performance.

Roeser et al. (1996) proposed that the quality of the school environment, or what they termed the *school psychological environment*, be examined with respect to both its

*goal* and *relationship* dimensions. With respect to the former, achievement goal dimensions can be categorized by either task or ego goals, both having the potential to either promote or undermine student academic achievement. Schools that communicate mastery or task goals place an emphasis on learning and intellectual development, whereas those that establish ego-centered goals emphasize social comparison and competition. Several studies have shown that task-oriented school environments contribute to increases in students' academic efficacy and motivation, as well as their use of effective cognitive strategies, to a much greater extent than do those that promote student competition (Kaplan & Maehr, 1999a, 1999b; Midgley, Anderman, & Hicks, 1995; Roeser et al., 1996).

When school personnel emphasize personal mastery goals over competition, students are less likely to feel frustrated with difficult assignments and self-conscious during learning activities and more likely to persist on difficult tasks (Meece, Anderman, & Anderman, 2006). Likewise, Eccles and Wigfield (2002) have indicated that the more intrinsically motivated students are (i.e., the more students pursue mastery goals) the more they engage in learning activities.

In addition to goal orientation, the school psychological environment can be affected by school climate factors, such as student-teacher relationships and levels of students' belongingness or connectedness to school. For instance, students who have teachers they characterize as warm and supportive and as promoting positive student social interactions tend to report high levels of engagement and interest in school-related activities, including academics (Booker, 2004; Goodenow, 1993; Ryan & Patrick, 2001).

Students' perceptions of belongingness within the school environment have also been cited frequently within the literature as they relate to student motivation and achievement. For instance, research (Furrer & Skinner, 2003; Roeser et al., 1996) has shown that children who feel connected to others in the school environment are more confident in their abilities to perform in school and more likely to experience long-term academic success.

#### *School Psychological Environment and African American Students*

Although the research is sparse, a few studies have demonstrated the crucial role school-level variables play in motivation and academic outcomes for minority students (Booker, 2006; Kaplan & Maehr, 1999a, 1999b). For example, Kaplan and Maehr (1999a) found that the promotion of task or mastery goals in the classroom was positively related to African American students' perceptions of school belongingness, academic competence, and self-esteem, as well as academic performance. In addition, research (Towns, Cole-Henderson, & Serpell, 2001) has shown that climate factors such as strong administrative leadership, the communication of high expectations for achievement, and an emphasis on academic skill development and teamwork contribute to student success in urban schools.

Supportive and caring school environments that facilitate student learning and engagement also contribute to academic success for minority youth placed at risk (Swaminathan, 2004; Towns et al., 2001; Waxman, Huang, & Anderson, 1997). Evidence has shown that positive perceptions of school climate and high level of belongingness are significant predictors of student GPA among low income, African American students (Taylor, 1999). However, other studies have not supported this relationship between

school climate and academic achievement (Booker, 2006), suggesting that perhaps other student-level variables may be more pertinent in predicting academic outcomes.

In the present study, we seek to fill a void in the literature of the effects of school climate factors on levels of academic achievement among urban African American middle school students placed at risk by examining the mediating effect of students' levels of intrinsic motivation and levels of engagement in academics. The hypothesized model is shown in Figure 1.

### Method

Participants included 282 African American students (136 boys and 146 girls) in grades six through eight from seven different urban parochial middle schools in four cities in the Eastern United States. Four of the schools were coeducational, two educated boys only (N=34 and 58) and one educated girls only (N=34). The two single-sex schools and three of the coeducational schools were small middle schools for children placed at risk known as Nativity schools. The two remaining schools were larger schools with students in Pre-K through grade 8. Forty-eight (17%) of the participants were in sixth grade, 114 (40%) were in seventh grade, and 120 (42%) were in eighth grade. (The sample of 6<sup>th</sup> graders is proportionately smaller because report card grades were not available for many of them.) Participants represented 76% of the middle school population in the seven schools. The mean age of participants was 12.6 years (SD=.9) and 92% of students qualified for federal free or reduced price meals.

Surveys were provided to each of the schools for administration to students that assessed students' perceptions of the school climate in terms of how positive they viewed the student social interactions at their school (4 items,  $\alpha=.60$ ), how much they

enjoyed school and viewed school rules as fair (5 items,  $\alpha = .78$ ), how supportive they perceived the school's teachers and principal (5 items,  $\alpha = .77$ ), and how learning and task focused they perceived the math and language arts classes (12 items, 6 for each class,  $\alpha = .79$ ). Students indicated on a 4-point scale the extent to which they disagreed or agreed with statements that comprised the scales. Also assessed were students' perceived levels of intrinsic or mastery motivation for school work, or tendency to persist even when tasks are difficult (7 items,  $\alpha = .80$ ; same 4-point scale). In addition, students' levels of academic performance were assessed using report card grades in four core subjects from their most recent academic year and their levels of academic engagement were compiled from ratings provided by homeroom teachers or advisors (12 items,  $\alpha = .92$ ; items scored on a 3-point scale indicating the extent to which the behavior occurred). This scale included items such as the extent to which the student works well independently, completes assignments on time, and comes to class prepared with pencils and books.

### Results

As shown in Table 1, zero-order Pearson correlations were computed examining the relation of four climate variables (i.e., students' perceptions of the peer social climate, school as enjoyable and fair, levels of support from teachers and principal, and the quality of the learning environment of math and language arts classes) to students' self-perceived intrinsic motivation, teachers' perceptions of student academic engagement, and students' report card grades (GPA). These results showed that only the level of students' perceptions of their school as enjoyable and its rules fair was significantly related to GPA, and therefore was the only climate variable included in the analysis of the

hypothesized model. In addition, correlation results showed that both students' perceived levels of intrinsic motivation and teachers' ratings of students' engagement in learning were significantly related to GPA, as well as to students' perceptions of their school as enjoyable and its rules fair, qualifying them as possible mediators.

A series of three multiple regression equations, as outlined by Darlington (1990), were then built to test the proposed model. As shown in Table 2, both students' perceived levels of intrinsic motivation and teachers' appraisals of students' engagement in learning satisfied the conditions necessary to render them as mediators of the climate-school performance relation. In the third regression analysis, as shown in Table 3, students' levels of perceived intrinsic motivation served as a mediator of the relation between school climate perceptions and teachers' assessments of students' academic engagement. These results provide support for the hypothesized mediator model. Additional analyses showed that intrinsic motivation served as a mediator of the relation of both perceptions of the principal and teachers as supportive and the quality of their math and language arts class learning environments to levels of student engagement (no tables shown).

Because neither student sex nor school gender arrangement (single-sex or coed) were related significantly to GPA, levels of perceived intrinsic motivation, or student engagement in learning, they were not included as covariates in the multiple regression analyses.

### Discussion

In addition to providing support for the hypothesized model of how school climate perceptions affect students' levels of intrinsic motivation, observed engagement in learning, and academic performance, results contribute to an understanding of

processes important to school engagement and performance of young urban African American adolescents. As research (Kaplan & Maehr, 1999a, 1999b) has suggested, urban African American adolescents respond positively to a school environment that they perceive to be supportive and with rules and regulations that strike them as fair. In the present study, a number of climate variables were related to students' intrinsic motivation for school work and their levels of engagement in academics (as rated by students' homeroom teachers), including students' perceptions of their teachers and principals as caring and supportive and their math and language arts classes as being focused on learning. These findings are consistent with recent research on the importance of supportive relationships with teachers and mastery oriented classrooms for students (Furrer & Skinner, 2003; Meece et al., 2006; Roeser et al., 1996).

The finding that students' perceptions of the quality of the peer social climate in their schools was related to levels of intrinsic motivation, but not to students' levels of academic engagement or academic performance, can be viewed as consistent with research (Kaplan & Maehr, 1999b) that has shown that the relationships most important for school success for African American children are with teachers. Although the importance of positive peer relationships at the middle school level cannot be underestimated, experiencing teachers as supportive and caring appears to be more important for academic engagement and success.

Results are also consistent with previous research that underscores the important role that student motivation plays in academic achievement. For example, Furrer and Skinner (2003) emphasized the importance of students being engaged in their academic work, as higher levels of engagement lead to short-term and long-term academic benefits.

In addition, research by Marchant, Paulson, and Rothlisberg (2001) showing that students' motivation levels and competence perceptions were related to academic outcomes suggests the need for teachers to provide instruction that enhances student motivation to learn and persist when the work becomes difficult.

The findings of the present study are significant in that they present indicators of a pathway to success for African American urban middle school students placed at risk. They suggest that establishing a supportive and respectful environment in school contributes to students' motivation to persist at challenging academic work and their engagement in learning activities in school, in addition to contributing to their academic performance. Middle schools teachers and administrators will benefit urban at-risk students when they take steps to establish an environment in which students are treated fairly and respectfully. And, as Roeser et al. (1996) indicated, because how students perceive the environment affects their responses to that environment, establishing the relationship needs of the students with respect to teachers and administrators as a priority increases the likelihood of higher levels of student engagement and performance.

Despite the present study's significant findings there are several limitations that should be addressed. Because of the cross-sectional nature of the data examined, alternative relations among the variables may exist, and there may be a cyclical relationship among the variables. For example, student engagement may be reinforced by supportive and respectful teachers which could then lead to increases in students' levels of intrinsic motivation and engagement. In addition, it should be pointed out that students' academic grades were earned prior to the assessment of their attitudes and

perceptions. At the same time, however, a strength of the study is that data were provided by both teachers and students.

The sample of middle school children used in the present study is also unique with respect to the schools they attended and the high percentage of students who qualified for the federal free and reduced price meal programs. This high percentage is indicative of the fact that these children are among those most at risk for school failure. In addition, the nature of the schools attended is quite different from that of large urban public middle schools in size, teaching staff, and program. Five of the schools in the study that follow the Nativity model of education offer very small classes for instruction and an extended day for additional study and remediation. They also communicate consistently high expectations for student behavior and academic performance. These factors suggest that the findings of this study may not be indicative of the processes that affect children with similar backgrounds who attend urban public schools.

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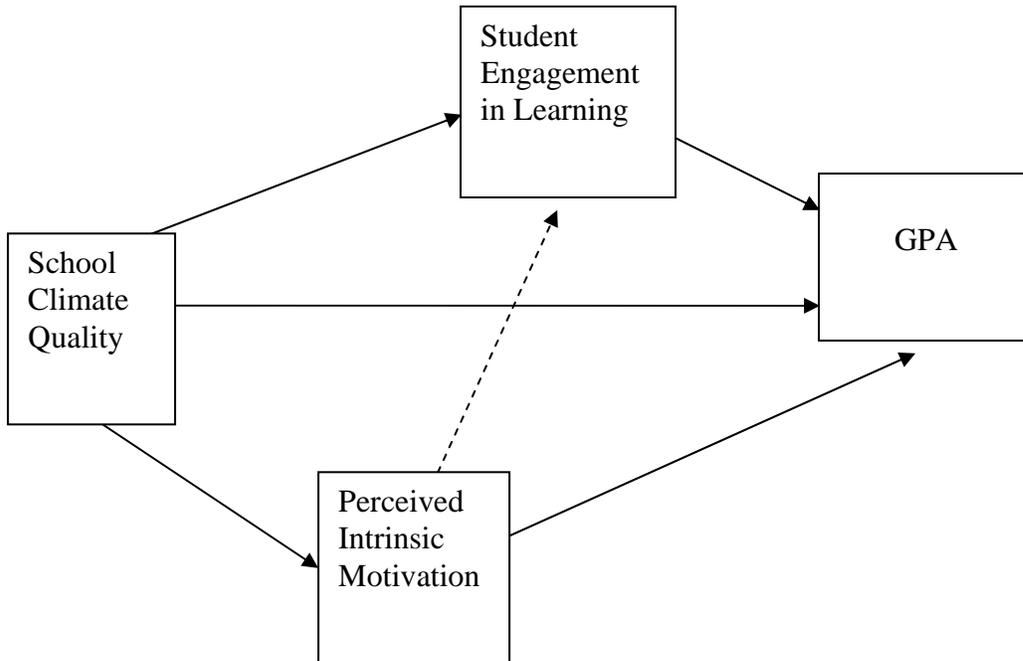
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*Figure 1.* Mediator model predicting student academic performance (GPA) from school climate quality mediated through perceived intrinsic motivation and teacher ratings of student engagement in classroom learning.

Table 1

*Results of Pearson Correlation Analyses Predicting Levels of Intrinsic Motivation, Student Academic Engagement, and Grade Point Average (N=282)*

Predictors:	Intrinsic Motivation (self-perception)	Teacher Rating of Engagement	GPA
Single-sex (1) vs. coed (2) structure	.04	.06	.11
Positive peer social climate	.15*	.04	.05
Enjoys school; rules are fair	.31***	.14*	.16**
Principal and teachers are supportive and caring	.29***	.20***	.07
Productive learning class environments	.32***	.17**	.09
Intrinsic motivation	---	.26***	.16**
Teacher rating of student academic engagement	.26***	---	.53***

\*\*\*  $p \leq .001$     \*\*  $p \leq .01$     \*  $p \leq .05$  (two-tailed)

Table 2

*Results of Multiple Regression Analyses Examining the Mediator Effects of (a) Intrinsic Motivation and (b) Student Academic Engagement on the Relation of School Enjoyment to Grade Point Average (N=282)*

Predictor	$R^2$ Change	Beta	$t$
<i>Step 1</i>			
School Enjoyable and Fair	.025	.159	2.70**
<i>Step 2a</i>			
School Enjoyable and Fair		.121	1.96
Intrinsic Motivation	.014	.123	1.99*
<i>Step 2b</i>			
School Enjoyable and Fair		.080	1.54
Student Academic Engagement	.265	.520	9.98***

\*\*\*  $p \leq .001$    \*\*  $p \leq .01$    \*  $p \leq .05$

Table 3

*Results of Multiple Regression Analyses Examining the Mediator Effect of Intrinsic Motivation on the Relation of School Enjoyment to Teacher Assessment of Student Academic Engagement (N=282)*

Predictor	$R^2$ Change	Beta	$t$
<i>Step 1</i>			
School Enjoyable and Fair	.020	.142	2.35*
<i>Step 2</i>			
School Enjoyable and Fair		.067	1.08
Intrinsic Motivation	.051	.238	3.83***

\*\*\*  $p \leq .001$    \*\*  $p \leq .01$    \*  $p \leq .05$