What Do the Data Tell Alabama's Middle School Principals about Their School Improvement Efforts?

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Abstract

This research study looked at the extent to which teachers' perceptions of their school's climate and culture, students' perceptions of their school's climate and culture and its safety, and socio-economic variables help to predict Alabama eighth grade students' performance on the SAT10 reading and math exams. The strongest predictors of test scores were the percentage of students in each school who qualified for free or reduced price lunch, followed by teachers' perceptions of their school's climate and culture, and student perceptions of negative socio-economic variables affecting them. Recommendations are offered for principals based on these findings.

What Do the Data Tell Alabama's Middle School Principals about Their School Improvement Efforts?

School improvement, also referred to as school reform, has been at the top of America's educational agenda since 1985, when the National Commission on Excellence in Education published its scathing report, *A Nation at Risk*. Alabama's middle school principals are clearly deeply and continuously engaged in fostering school improvement (Southern Regional Education Board, 2010). Consistent with Sarason's (1996) and Ravitch's (2010) contentions, the school's culture and climate are often at the heart of what must be improved before performance will improve. As such, improving the culture and climate of schools has been a consistent focus of school improvement. Because leadership is such a key factor in schools, but one that influences indirectly through the shaping of the school culture and climate (Leithwood, Louis, Anderson, & Wahlstrom, 2004; Louis, Leithwood, Wahlstrom, & Anderson, 2010), it also has been a focus of school improvement. Lezotte (2001) found that school safety was one of the most important correlates of effective schools, and this, too, has been a consistent focus of school improvement.

However, as Anyon (1997), and countless others, noted:

> Unfortunately, educational *small victories* such as the restructuring of a school or the introduction of a new classroom pedagogical technique, no matter how satisfying to the individuals involved, without a strategy to eradicate underlying causes of poverty and racial isolation, cannot add up to large victories…with effects that are sustainable over time. (p. 165)

School-related factors have been estimated to account for only 10% to 20% of student achievement (Creemers & Reezight, 1996). An explanation may be that schools are not the only, nor perhaps even the primary, factors in student performance; socio-economic variables may play an even more significant role (Coleman et al., 1966; Jencks et al., 1972; Payne, 2008; Steinberg, 1996; Zoch, 2004). In 2009, the National Academy of Education noted that U.S. students spend approximately 1,150 hours per year in school, yet more than four times that many working hours at home or in their neighborhood. They concluded that most of the inequality in cognitive and performance differences among poverty-level students and their more affluent peers comes from the home and the neighborhood (p. 4).

Purpose of the Study

To examine these issues further, the purpose of this study was to examine recent data on school climate, school safety, and socio-economic variables related to students as they relate to student performance on the eighth grade SAT10 reading and math exams in Alabama's public schools. The primary research question guiding this study was, "To what extent do student and teacher perceptions of school climate, students' perceptions of socio-economic variables affecting them, and the percentage of students qualifying for free or reduced price lunch in a school help to predict student performance on standardized exams?" This question was based on the theoretical model that student performance is based on a combination of factors, some of which are related to the school, such as school culture, climate, and safety, others of which, primarily socio-economic factors, are related to the student's home and community, and individual factors, such as intelligence and motivation. Only the first two sets of factors were examined in this study, as no reliable data were available on the individual factors.

A Brief Look at the Knowledge Base

The focus of this literature review is on the relationships between student performance on standardized examinations and school climate, school safety, and socio-economic variables related to the student. Although most school reform literature focuses on variables within the school's assumed control, other philosophic approaches look beyond the school for influences on student performance in school, particularly socio-economic influences.

School Variables

Various aspects of school climate have been linked to student success: high expectations for students, teachers, and parents; safe and orderly schools; high morale, positive relationships, and active participation by stakeholders (Kullar, 2011); as well as teacher support, consistency and clarity of rules, enforcement of those rules, student achievement orientation, and peer interactions (Brand, Felner, Shim, Seitsinger, & Dumas, 2003). Goddard, Sweetland, and Hoy (2000) added belief in students' ability to achieve, students working hard to achieve, and students respecting other students who also worked hard to achieve.

As discussed previously, leadership is a key, albeit largely indirect, factor in student success. Its primary influence is estimated to be on the climate of the school, which, in turn, influences student performance (Creemers & Reezight, 1996; Hallinger & Heck, 1996; Leithwood & Jantzi, 2006; Leithwood, Jantzi, & Steinbach, 1999; Leithwood et al., 2004; Louis et al., 2010; Marzano, Waters, & McNulty, 2005; Waters, Marzano, & McNulty, 2003). More recently, special attention has been focused on principals' use of data to inform instruction. Louis et al. (2010) found that although principals have considerable data on students' performance, few analyze and use these data collaboratively with their faculty.

School safety has often been linked to student achievement (Aleem & Moles, 1993; Dinkes, Cataldi, & Lin-Kelly, 2007; Gottfredson, Gottfredson, Czeh, Cantor, Crosse, & Hantman, 2000, Gottfredson & Gottfredson, 1989; Gresham, 2008; Roney, Coleman, & Schlichting, 2007). Students (and teachers) must feel safe in order to participate fully in the learning process. However, studies on this relationship are not unanimous in their findings. Gronna and Chin-Chance (1999) and Tramalglini (2010) found only a minimal relationship between them, if at all.

Non-School Variables

Camins (2012) noted that what separates education in the U.S. from competitor countries is that, on average, socioeconomic status explains far more of the variation in test scores in the U.S. than in those countries, primarily because those countries have far better social support systems to mitigate the effects of poverty. As Berliner (2014) noted, "Sadly, compared to all other wealthy nations, the USA has the largest gap between its wealthy and poor citizens…. America's dirty little secret is that a large majority of poor kids attending schools that serve the poor are not going to have successful lives" (p. 1).

Steinberg (1996) identified the interaction of culture and socio-economic issues as a primary determinant of student performance and concluded that in order to provide opportunities for students to learn, social problems that might interfere with that learning, e.g., family problems, drugs, pregnancy, poverty, and violence, especially among poor and minority youth in inner city schools, must be addressed first. Berliner (2014) concluded that out-of-school variables account for 60% of the variance in student performance on standardized examinations (p. 3). In 2009, Berliner identified low birth-weight and non-genetic influences, inadequate medical, dental, and vision care, food insecurity, environmental pollutants, family relations, and neighborhood characteristics as highly influential variables for poor families. In 2014, Berliner expanded this list to include child well-being, mental health, illegal drug use, infant and maternal mortality, social mobility, teenage birth rate, and rates of imprisonment, all variables associated with poverty (see, also, Ladd, 2012).

To address these issues would require massive investments of money, personnel, and time. Steinberg (1996) advocated that in seeking educational reform, the focus must be on the students, not on the schools, for factors outside the school affect students' behaviors, attitudes, and performance in schools. Steinberg examined the interaction of ethnicity with culture as a major factor in understanding why some students are engaged in school and others far less so. What encourages some students to work hard, maintain high expectations, and accept personal responsibility for their performance? Parents' knowledge, skill, opportunity, acceptance of their child, firmness, allowance of suitable autonomy, and engagement with school had key, indirect effects on student performance. Steinberg also noted that peers have considerable influence, especially in grades six through ten, and that student time spent in extra-curricular activities, working part-time jobs, and socializing are factors that limit American students' performance compared to students from various other countries. Berliner (2014) concluded that the absolute key factor is that jobs and income for poor families must rise and also proposed improved medical, dental, and vision insurance, better nutrition, and psychological counseling in schools.

Students' socio-economic backgrounds have long been regarded as a major factor in their performance. Jencks et al. (1972) conducted a large-scale study and concluded that a student's socio-economic background affects the amount of schooling a student accumulates, as well as explaining nearly half the variation in their educational attainment (p. 143). Moreover, the cumulative impact of school quality affects that attainment by less than half a year by the time of high school graduation (p. 148). Compensatory education was found to be only marginally effective. In large part, this failure was attributed to "cultural attitudes, values, and taste for schooling play an even greater role than aptitude or money" (p. 141). Jencks et al. concluded that there is no evidence that school reform can alter student inequality in performance on standardized exams.

Some theoretical models of the effects of poverty on educational performance of students, such as that of Jencks et al. (1972), are known as "deficit models." These models posit that children

growing up in poverty have a different set of skills, attitudes, and a different culture than do more financially privileged students; that there exists a "culture of poverty" (Lewis, 1961). These models promulgate false myths that poor people are unmotivated and have poor work ethics, poor parents do not value education and are uninvolved with their children's learning, poor people are linguistically deficient, and poor people tend to use drugs and alcohol (Gorski, 2008). The deficit model ignores systemic conditions and inequities (Gorski, 2008). However, the challenges facing children of poverty cannot be underestimated or overlooked; current federal legislation calling for all children to be on grade level by school year 2013-2014 fails to take these challenges into consideration (Ladd, 2012). At the same time, "demographics are not destiny" (Vermont Department of Education, n.d., p. 6). Excuses should not be made or tolerated (Carter, 2001; Ladd & Fiske, 2011). Schools must counteract the systemic conditions and inequities faced by children of poverty and schools serving large numbers of poor children.

Sparks (2012) cited research carried out by Harvard University's Center on the Developing Child, concluding that children from poverty backgrounds experience "toxic stress," which is severe, sustained, and not aided by supportive relationships. These children often suffer from high mobility, homelessness, hunger, parents who are absent or in jail, domestic violence and drug abuse. These conditions affect academic performance.

Henig, Hula, Orr, and Pedescleaux (1999) also concluded that socio-economic variables contribute to poor student performance. Similarly, Zoch (2004) criticized reform efforts such as learning styles, multiple intelligences, brain-based education, longer school days, individual-ization of education, and tech-nology on the grounds that the inequality of student success is a complex mix of a plethora of problems, many of which are external to the school. To overcome these socio-economic conditions, Berliner (2014) advocated community-oriented school reforms, including health clinics, job training for adults, exercise rooms, community political meetings, technology access and training for adults, and libraries to assist poor families.

Method

The present study was designed as a quantitative design using data from the Alabama Department of Education to explore the extent to which school climate, school safety, and student socio-economic variables helped to predict student performance on standardized examinations in Alabama's public schools serving eighth grade students. Alpha was set at .05.

Participants

The participants in this study were the teachers and students in the 357 Alabama public schools that served eighth grade students in school year 2010-2011 and that participated in both the 2010-2011 *Alabama Teaching Environment Survey* (*ATES)* and the 2010-2011 *Alabama PRIDE Surveys Questionnaire*. The study excluded magnet schools because of their unique entrance requirements and schools serving special populations, such as blind or incarcerated youth.

Instrumentation

All data for this study were obtained from Alabama State Department of Education (ALSDE) databases. The database for teacher perceptions of school climate and leadership was the 2010-2011 *Alabama Teaching Environment Survey* (*ATES)*, developed in conjunction by the ALSDE and International Survey Associates. Student perceptions of school climate, school safety, and selected socio-economic variables were taken from the 2010-2011 *Alabama PRIDE Surveys Questionnaire*, also developed by the two entities. Data on student performance on the 2010-2011

SAT10 reading and math examinations were taken from the ALSDE database, as were data on the percentage of students in each school eligible for free or reduced price lunch.

Table 1 presents the survey items used from the *ATES* to obtain teacher perceptions on school climate. Table 2 presents the survey items used from the *PRIDE Surveys* to obtain student perceptions of school climate, school safety, and positive and negative socio-economic influences perceived by the student.

Limitations of the Study

Although the percentage of students qualifying for free or reduced price lunch is the most commonly used surrogate measure of students' socio-economic backgrounds in U.S. studies, it is an imperfect surrogate and must be considered a limitation of the study.

Because not all Alabama schools elected to participate in the two surveys, this study is conceptualized as a study based on a convenience, non-randomized sample. However, because the vast majority of schools did participate ($n = 357$ out of $455 = 78\%$), and because the rate of return was over 80% in each school, the sample was considered adequate, albeit not optimal. The lack of a truly random sample is considered a limitation of the study.

The *ATES* and *PRIDE* have strong content validity, as they were based on an extensive professional knowledge base on school climate, and school safety. They also have expert validity, as they were developed by teams of national authorities on these issues. However, no reliability data are available, which must be considered a limitation of this study.

Table 1. Survey Items Comprising the Key Variables from the ATES Survey

Variable	Survey Item
Teacher Perceptions of School Climate	Teacher: There is a sense of trust and respect in this school
	Teacher: Most members of the school community are proud of their school
	Teacher: This school is clean and well maintained
	Teacher: This school has clear rules on bullying
	Teacher: There is an atmosphere of trust and mutual respect in the school
	Teacher: Students take pride in their academic accomplishments
	Teacher: Teachers work collaboratively to improve instruction
	Teacher: Students have pride in their school
	Teacher: Students feel they are a part of the school community
	Teacher: Students feel that teachers care about them
	Teacher: My principal provides a high quality of leadership
	Teacher: My principal helps us to make the best use of student achievement data

Table 2. Survey Items Comprising the Key Variables from the PRIDE Survey

Variable	Survey Item
Student Perceptions of School Climate	Student: I trust my teachers
	Student: Teachers treat students with respect
	Student: Teachers encourage all students to stay in school
	Student: I know that my teachers care
	Student: Teachers make all students feel like they belong in this school
	Student: How often did you try to do your best work in school
Student Perceptions of School Safety	Student: I feel safe in the classroom
	Student: I feel safe in the cafeteria
	Student: I feel safe in the hallways
	Student: I feel safe in the bathroom
	Student: I feel safe in the gym
	Student: I feel safe on the bus
	Student: I feel safe at school events
	Student: I feel safe on the playground
	Student: I feel safe in the parking lot
Student Perceptions of Positive Socio-Economic Variables	Student: Do you attend church or a synagogue?
	Student: Do your parents punish you when you break the rules?
	Student: Do your parents set clear rules?
Student Perceptions of Negative Socio-Economic Variables	Student: Do your friends use alcohol at school?
	Student: Do your friends use marijuana in school?
	Student: Do your friends use tobacco in school?
	Student: Have you skipped school this year?

The SAT10 reading and math examinations claim to have strong validity and reliability on their website, were nationally normed in 2007, and ten editions have been widely used nationally. However, as no validity information or reliability data are available through their website, this is considered a limitation of the study.

Results

To overcome the lack of reliability data on the two surveys, the researcher conducted both factor analyses and internal consistency analyses on the items used from these surveys. For the items used from the *ATES* Survey concerning school climate, a Cronbach's alpha of .679 was found, and all items loaded well on a single component. For the items used concerning school leadership, the alpha level was .791, and all items loaded on a single component. For the items

used from the *PRIDE* survey, the alpha for school climate was .890; for school safety, it was also .890. Both constructs also loaded on single components when a factor analysis was run using a Varimax rotation. For the selected student socio-economic variables the Cronbach alpha was .787. Consequently, the items and constructs were considered to be reliable. Table 3 presents the results of the factor analysis.

Pearson Product Moment correlations among the primary independent variables were conducted as preliminary data analysis (see Table 4). Because of the relatively large sample size (N = 357), almost all correlations, even those in the low range (r ≤ .3), were statistically significant at the .05 level.

Student perceptions of school climate have moderate correlations with teachers' perceptions. This suggests that these perceptions are at least partially based on what occurs in the school.

In looking at socio-economic variables, the percentage of students qualifying for free or reduced price lunch had a moderate, negative correlation with teachers' perceptions of the school climate. Student perceptions of positive socio-economic variables affecting them had moderate, positive correlations with their perceptions of the school climate and with teachers' perceptions of the school climate. Student perceptions of negative socio-economic variables affecting them had moderate, negative correlations with their perceptions of school climate. Student perceptions of positive socio-economic variables affecting them had moderate, negative relationships with the percentage of students in the school qualifying for free or reduced price lunch. In short, student socio-economic variables appear to interact with the school climate.

To answer the central research question, stepwise linear regressions were run, using the criteria of a Probability-of-F-to-enter being equal to or less than .05 and a Probability-of-F-to-remove being equal to or greater than .10. The independent variables included teachers' perceptions of the school climate, student perceptions of the school climate, student perceptions of the school safety, percentage of students eligible for free or reduced price lunch, percentage of students participating in extra-curricular activities or sports, percentage of students working part-time, student perceptions of positive socio-economic influences on them, and student perceptions of negative socio-economic influences on them. The dependent variables were student performance on the eighth grade SAT10 math and reading exams.

For the math regression, only the percentage of students qualifying for free or reduced price lunch, student and teacher perceptions of the school climate, and student perceptions of the negative socio-economic influences on their lives entered the equation, with free or reduced price lunch accounting for the bulk (80%) of the overall Adjusted R^2 of .529 (see Table 5). For the reading regression, only the free and reduced price lunch variable, teachers' perceptions of school climate, and student perceptions of the negative socio-economic influences on them entered the equation. Again, the free or reduced price lunch variable accounted for the bulk (86%) of the overall Adjusted R^2 of .627 (see Table 6).

Table 3. Results of the Factor Analysis (n=357)

	Component						
	Safety	Teacher Climate	Student Positive Influences	Student Climate	5	6	7
TTrust	**.089**	**.867**	**.034**	**.164**	**.173**	**.083**	**-.106**
TProud	**.128**	**.707**	**.019**	**.252**	**.294**	**.291**	**-.112**
TClean	**.064**	**.566**	**.016**	**.129**	**-.015**	**.107**	**.194**
TRulebully	.117	.654	.149	.121	.027	.096	.032
TMutualrespect	.074	.815	.010	.167	.118	.097	-.110
TPrideacad	.084	.504	.145	.260	.185	.561	.025
TStudpride	.105	.580	.099	.340	.241	.532	.008
TCommunity	.103	.554	.141	.349	.258	.447	.003
TCollaborate	.044	.640	.241	.243	.039	-.001	-.052
TLeadership	.018	.833	.145	.009	.022	-.040	.036
TData	.009	.706	.299	-.007	.002	-.168	.090
STrustteach	.158	.254	.354	.785	.178	.156	-.016
SRespect	.153	.276	.308	.815	.138	.147	-.032
SEncourage	.148	.256	.305	.812	.155	.017	.000
STeacherCare	.139	.271	.365	.810	.158	.098	-.003
SBelong	.076	.211	.418	.803	.039	.078	.038
SBest	-.028	.066	.654	.545	.061	-.004	.006
Classrooom	.932	.044	-.002	.081	.025	.061	-.025
Cafeteria	.955	.072	.001	.066	.025	.046	-.006
Halls	.962	.078	.018	.055	.044	.037	.006
Bathroom	.957	.071	.016	.063	.050	.029	.007
Gym	.949	.085	.003	.071	.032	.033	-.010
Bus	.940	.069	.007	.068	.072	.024	.012
Events	.959	.051	.015	.082	.021	.031	.005
Playground	.974	.055	.007	.075	.036	.040	-.005
Parkinglot	.900	.079	.007	.039	.049	.019	.032
Church	-.021	.110	.624	.007	.070	.220	.007
ParPunish	.197	.254	.402	.367	.355	.258	-.147
ParRules	.017	.154	.736	.305	.142	.139	-.065
FriendsAL	.016	-.105	-.894	-.297	.033	-.038	.034
FriendsMJ	-.051	-.213	-.810	-.366	-.178	-.027	.048
FriendsTB	.051	-.067	-.897	-.239	.085	-.082	.012
Skipped	-.026	-.264	-.722	-.295	-.352	.080	.034

Table 4. Pearson Product Moment Correlations among Key Independent Variables (n = 357)

	Teacher Perceptions of School Climate	Student Perceptions of School Climate	Student Perceptions of School Safety	Student Perceptions of Positive Socio-Economic Variables	% of Students Qualifying for Free or Reduced Price Lunch	Student Perceptions of Negative Socio-Economic Variables
Teacher Perceptions of School Climate						
r	1.00	.529	.192	.359	-.346	-.286
p		.000	.000	.000	.000	.000
Student Perceptions of School Climate						
r		1.00	.193	.487	-.197	-.634
p			.000	.000	.000	.000
Student Perceptions of School Safety						
r			1.00	.106	-.260	-.028
p				.045	.000	.597
Student Perceptions of Positive Socio-Economic Variables						
r				1.00	-.486	-.602
p					.000	.000
% of Students Qualifying for Free or Reduced Price Lunch						
r					1.00	.181
p						.000
Student Perceptions of Negative Socio-Economic Variables						
r						1.00
p						

Discussion

The strong contribution, as measured by the Adjusted R2, of students' socio-economic backgrounds to the prediction of their performance on standardized tests supports the conclusions of the seminal studies of Coleman et al. (1966) and Jencks et al. (1972), as well as an extensive body of more recent research, that individual students' backgrounds play a strong role in their performance in school. Moreover, the socio-economic background of the overall school population also is a key predictor of student performance. This was supported by the regression analyses on student math and reading scores, with the percentage of students eligible for free or reduced price lunch accounting for the bulk of the models' Adjusted R2. The fact that student perceptions of their school's safety did not enter the regression equation in predicting their performance on the standardized exams was contradictory to the majority of the studies in this area (Aleem & Moles, 1993; Dinkes et al., 2007; Gottfredson et al., 2000, Gottfredson & Gottfredson, 1989; Gresham, 2008; Roney et al., 2007), but did support the findings of Gronna and Chin-Chance (1999) and Tramalglini (2010). One possible interpretation of this finding is that perhaps Alabama's middle school principals have ensured sufficient school safety to eliminate this variable's threat to student performance. In part, this may be attributed to the fact that Alabama has no systems classified as

"large city" systems in the National Center for Education Statistics' Common Core of Data as student safety is of particular concern in large urban school districts.

The overall conclusion reached was that Alabama's middle school principals' efforts to improve their schools do positively affect student achievement. Teacher perceptions of the school's climate and culture were a significant variable in predicting student performance on the SAT10.

Table 5. Linear Regression Results for SAT10 Math (n = 357)

Model	Variable Entered	R	Adjusted R^2	Standard Error of the Estimate	R Square Change	Sig. F Change
1	Free/Reduced Lunch	.646	.416	11.27	.417	.000
2	Student Perceptions of Climate	.704	.493	10.50	.079	.000
3	Teacher Perceptions of Climate	.720	.515	10.27	.023	.000
4	Student Perceptions of Negative Socio-Economic Influences	.730	.527	10.14	.013	.002

Note: Durbin-Watson = 1.578

Note: Excluded Variables: Student Perceptions of Positive Socio-Economic Factors (sig. = .640); Student Perceptions of School Safety (sig. = .488)

Table 6. Linear Regression Results for SAT10 Reading (n = 357)

Model	Variable Entered	R	Adjusted R^2	Standard Error of the Estimate	R Square Change	Sig. F Change
1	Free/Reduced Lunch	.735	.541	8.66	.541	.000
2	Teacher Perceptions of Climate	.776	.602	8.07	.061	.000
3	Student Perceptions of Negative Socio-Economic Influences	.792	.627	7.83	.025	.000

Note: Durbin-Watson = 1.881

Note: Excluded Variables: Student Perceptions of Positive Socio-Economic Factors (sig. = .133); Student Perceptions of School Climate (sig. = .087); Student Perceptions of School Safety (sig. = .449)

However, unfortunately, poverty continues to be far too strong a predictor of low student performance, at least on standardized exams. Poverty is also moderately related to negative influences on students' lives, e.g., having friends who use tobacco, alcohol, or drugs. These negative influences, as Steinberg (1996) posited, are particularly strong at the eighth grade level and were found to be significant predictors of student performance. Consequently, Alabama's middle school principals, and the schools they serve, must continuously strive to counteract the effects of poverty.

Recommendations for Alabama's Middle School Principals

Based on the finding that students' socio-economic backgrounds are significant predictors of their performance on standardized exams, and linking this finding to the knowledge base, the following recommendations are made to Alabama's middle school principals:

- Principals should recruit strong teachers whose style and cultural sensitivity matches the needs of children of poverty. Equally important, principals should remove ineffective teachers in a timely manner (Cantor et al., n.d., Carter, 2001; Center for Public Education, 2005, 2012; Ladd, 2012; Learning First Alliance, 2013; Schargel et al., 2007; Troller, 2011).
- Principals should arrange for ongoing, internal staff development, providing support and encouragement. Part of this staff development should be focused on cultural sensitivity and how best to teach children of poverty (Cantor et al., n.d.; Learning First Alliance, 2013; Outreach Partnerships, 2004; Schargel et al., 2007; Troller, 2011).
- Principals should strive to develop support teams and services for students and their families, e.g., school social workers, counselors, and instructional and student services teams (Cantor et al., n.d.; Learning First Alliance, 2013; Vermont Department of Education, n.d.). They should build collaborative arrangements with community agencies (Outreach Partnerships, 2004), perhaps writing grants to support these arrangements and services (Troller, 2011).
- Principals should build a strong level of trust among the school, the parents, and the community. The principal should explore ways to accommodate the schedules and needs of the parents to facilitate their involvement in their children's education (Carter, 2001; Carter et al., 2009; Center for Public Education, 2005, 2012; Jacobson, 2008; Troller, 2011).

Based on the finding that teacher perceptions of the school's culture and climate are a significant predictor of student performance on both standardized exams and that student perceptions of the culture and climate are a significant predictor on the math exam, and linking these findings to the knowledge base, the following recommendations are made to Alabama's middle school principals:

- Effecting school improvement, especially in schools serving low-income populations, requires strong instructional and cultural leadership (Carter, 2001; Carter et al., 2009; Outreach Partnerships, 2004). There is no one style of leadership required, but the leader should be supportive (Schargel et al., 2007) and promote "constructive engagement of staff, students, and families" (Cantor, Smolover, & Stamler, n.d., p. 6). The principal should lead and model the development of a culture of collaboration (Center for Public Education, 2005, 2012; Jacobson, 2008; Ladd, 2012; Learning First Alliance, 2013; Vermont Department of Education, n.d.). The principal should be free to make important decisions (Carter, 2001). Finally, there must be a plan for principal transitions (Public Agenda, 2013).
- In order for collaboration to occur, principals should ensure the effective use of time, providing opportunities for teachers to collaborate during the school day (Chenoweth, 2009). Faculty meetings should be minimized; the ones which do take place should include time for sharing and celebrating successes and for discussing data on student performance (Schargel et al., 2007).
- Principals should help the school develop and pursue a common vision and goals (Chenoweth, 2009; Jacobson, 2008; Outreach Partnerships, 2004).
- Principals should help build and maintain a sense of family in their school, featuring teacher collaboration, personal relationships, learning from colleagues, classroom intervisitations by teachers, and mentoring (Cantor et al., n.d.; Carter et al., 2009; Center for Public Education, 2005, 2012; Chenoweth, 2009; Jacobson, 2008; Outreach Partnerships, 2004; Public Agenda,

2013; Schargel et al., 2007; Troller, 2011; Vermont Department of Education, n.d.). The school should be student friendly and avoid reliance on detentions and suspensions to maintain student discipline (Cantor et al., n.d.; Jacobson, 2008; Outreach Partnerships, 2004; Public Agenda, 2113; Schargel et al., 2007; Troller, 2011).

- Principals should foster a culture of high expectations, both for student learning and teacher performance (Carter, 2001; Carter et al., 2007; Center for Public Education, 2005, 2012; Jacobson, 2008; Outreach Partnerships, 2004; Public Agenda, 2013; Reeves, 2012; Troller, 2011). To build this culture, principals should hold celebrations of successes and provide non-traditional incentives (Carter et al., 2007; Public Agenda, 2013).

In their 2009 study of high-performing/high-poverty schools in Alabama, Carter et al. found no "deep dark secrets, silver bullets or magic potions. Instead [they] found a lot of common sense, mixed with a lot of passion, love and caring" (p. 4). This recipe, coupled with the specific recommendations provided in this section, would appear to be good guidance for not only principals of schools serving children of poverty, but for all principals.

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