The School Climate - Student Achievement Connection: If We Want Achievement Gains, We Need to Begin by Improving the Climate

John Shindler
California State University, Los Angeles

Albert Jones
California State University, Los Angeles

A. Dee Williams
California State University, Los Angeles

Clint Taylor
California State University, Los Angeles

Hermenia Cardenas
California State University, Los Angeles

ABSTRACT: This study examined the relationship between school climate and student achievement ratings in urban school districts in five states (N =230). Many educators view school climate and student achievement as separate considerations. However the results of this study suggest that climate and student achievement were highly related. In fact, the quality of the climate appears to be the single most predictive factor in any school's capacity to promote student achievement. The findings of the study suggest a series of general and theoretical implication for the field of education. It appears that the use of practices that promote a "psychology of success" lead to greater achievement and higher quality climate, and those that promote a "psychology of failure" lead to under-performance.

Key words: student achievement, school climate, psychology of success

Many educators view school climate and student achievement as separate considerations. For some, the idea of promoting a high quality climate can seem like a luxury in the face of the current high stakes assessment environment in which student achievement gains are paramount. However, the results of this study suggest that climate and student achievement are related. In fact, the quality of the climate appears to be the single most predictive factor in any school's capacity to promote student achievement.

The school climate-student achievement connection has been well-established in the research (Freiberg, Driscoll, & Knights, 1999; Hoy, & Hannum, 1997; Kober, 2001; Loukas, & Robinson, 2004; Norton, 2008; Shindler, Jones, Taylor, & Cardenas, 2004). While this relationship would not be news to most school administrators or teachers, considerations of climate are most often viewed as secondary.

Likewise few would endorse neglecting the quality of the climate at one's school, yet a minority of schools have systematic approaches to promoting or maintaining the quality of their climate. In many cases, the reason for the casual approach to climate is that it is not well understood or is viewed as a discrete consideration—unrelated to such things as pedagogical practice, achievement goals, curriculum, and teacher development. When school climate is defined narrowly, it can appear as a relatively independent factor. However, when viewed contextually, it becomes clear that it is related to *everything* else. In a study of urban public schools, Jones, Shindler, Cardenas, and Taylor (2003) found that all of the various aspects of climate were correlated to one another at most schools. Where one variable was found to be either high or low, the others were as well. In other words, no cases were found in which one variable, such as the discipline culture, was low and another, such as student interactions, was high.

While more direct methods of intervention with the goal of improving student achievement make sense, if the basic structure of a school is dysfunctional, its capacity to promote its desired goals is limited (Fullan, 2003). Examining student achievement trends from the past few years, data shows what could best be described as stagnation in the effort to improve test scores and decrease of the unacceptably large size of the achievement gap (National Assessment of Educational Progress, 2008). This may suggest that the common practice of adding isolated or piecemeal reforms has not produced the kinds of results that were hoped for (Norton, 2008). Placing climate at the heart of the reform process may provide the mechanism to situate

problems and solutions more effectively so that they can be better diagnosed, assessed, and mapped.

Purpose

The purpose of this study was to explore the relationship between student academic achievement and various elements within the domain of school climate, and to examine the nature and potential causality of that relationship. The study also sought to derive implications for practice, including a possible fundamental conceptual framework for climate quality and function and an operational roadmap for moving from a less functional to more functional climate.

Methodology

The study examined school climate and achievement at 230 urban public schools. The purposive sample of schools was drawn from districts in five states reflecting regional diversity, yet all districts contained schools with a range of achievement levels as well as diverse ethnic and socio-economic communities. Each school assessment team administered the Alliance for the Study of School Climate (ASSC) School Climate Assessment Instrument (SCAI). The team at each school incorporated a standard protocol and surveyed a minimum number of participants (N= 30+ students, 10+ teachers as well as 10+ staff and parents, with most sample sizes being much larger). Academic Performance Index (API) and Similar School Rating (SIM) scores (published by the state) were used to measure student achievement in California. Relative achievement test score percentile rankings were used in all other states.

The SCAI was designed to achieve an in-depth examination of the health, function, and performance of each school. While the term "school climate" was judged the best description for the intent of the instrument, it examines the construct of climate broadly, and includes eight distinct dimensions:

- School appearance *and* physical plant

- Faculty relations

- Student interactions

- Leadership decision making

- Discipline environment

- Learning environment

- Attitude *and* culture

- School-community relations

Items within the SCAI are structured to reflect three levels: high-, medium-, and low-functioning, and descriptive language is used to explain each level of each item. Participants are asked to rate their experience of their school on each item. Example items from the SCAI can be seen in Figure 1. High, medium, and low level items in the SCAI correspond to overall levels of school function and performance. Table 1 depicts the characteristics of these three levels. At the core of what defines a high functioning school is a high degree of organizational intentionality, collaborative effort, reflective practice, and a pervasive orientation toward achievement that could be classified as a "psychology of success (POS) (Table 2). Social contexts such as schools tend to promote either more POS or more "psychology of failure" (POF). Every pedagogical and administrative action could be judged to promote either more POS or POF. Therefore, items within the ASSC-SCAI reflected this construct theoretically as well as its practical indicators.

Success Psychology as a Conceptual Framework

As we examine the idea of a "psychology of success" what becomes evident is that several familiar concepts are rooted in this common phenomenon. The concepts of self-esteem, achievement psychology, intrinsic motivation, needs satisfaction, and success psychology are all rooted in the same fundamental components. They are:

- Growth versus fixed ability orientation as related to one's self-efficacy

- A sense of belonging and acceptance versus alienation and worthlessness

- Internal versus external locus of control

Paring the research in this area down, these three essential factors emerge to explain the degree to which a student has a psychological orientation toward success or failure. Moreover, there are a large number of studies to indicate that each of the three factors is correlated with academic success (Auer, 1992; Benham, 1993; Dweck, 2000; Klein & Keller, 1990). As we examine each factor independently, their efficacy becomes more evident.

Growth vs. Fixed Ability

Carol Dweck (2000; 2006) and her colleagues in their research over the course of 30 years have developed a very useful paradigm with which to examine academic self-concept, achievement, and motivation. They have demonstrated in a series of studies with students (Dweck, 2000; 2006) that future success is not

5. Discipline Environment		
Level 3	_Level 2_	_Level 1_
High **high-middle**	**middle** **middle-low**	**low**
5.c------------o------------------------ 0 ------------------------ 0 ----------------------- 0 --------------------- 0 -------------------		
Most teachers use effective discipline strategies that are defined by logical consequences and refrain from punishments or shaming.	Most teachers use some form of positive or assertive discipline but accept the notion that punishment and shaming are necessary with some students.	Most teachers accept the notion that the only thing the students in the school understand is punishment and/or personal challenges.
5.e------------o------------------------ 0 ------------------------ 0 ----------------------- 0 --------------------- 0 -------------------		
Maximum use of student-generated ideas and input.	Occasional use of student-generated ideas.	Teachers make the rules and students should follow them.

Figure 1. A sample of three items from scale 5 (Discipline Environment) of the ASSC School Climate Assessment Instrument (SCAI).

Table 1

Theoretical Construct for Each of the Three Levels of the ASSC School Climate Assessment Instrument (SCAI).

	Level 3	Level 2	Level 1
System	Intentional	Semi-Intentional	Accidental
Ethos	Sound vision translated into effective practice	Good intentions translated into practices that "work"	Practices defined by the relative self-interest of faculty and staff
Effect on Students	Liberating	Perpetuating	Domesticating
	Experience changes students for the better	Experience has a mixed effect on students	Experience has a net negative effect on students
Staff relations	Collaborative	Collegial	Competitive
Psychology of Achievement	Promotes a Psychology of Success (POS)	Promotes a Mixed Psychology	Promotes a Psychology of Failure (POF)

Table 2

Sub-factors for the Theoretical Construct of Achievement Psychology.

Psychology of Success (POS)	Psychology of Failure (POF)
Internal locus of control	External locus of control
Belonging and acceptance	Alienation and worthlessness
Mastery orientation	Helpless orientation

as much the result of talent (i.e., fixed ability factors) or current level of ability as it is the result of the orientation-cognitive strategy one uses to approach learning tasks (i.e., a growth mindset). Research of others along with personal reflection support the notion that the level of one's sense of competence (or self-efficacy) will relate to the level of self-esteem. We of course want our students to experience healthy levels of self-esteem. However, the different cognitive strategies that one might choose to use to attain that sense of competence will not accomplish the same result, especially in the long term. Dweck (2000) offers a useful lens for distinguishing two contrasting cognitive strategies for feeling competent and how they have dramatically different results over time. When a student uses a growth orientation, they view a situation as an opportunity to learn and grow. They do not see their performance within a situation as a measure of their innate ability as much as a measure of their investment—better results require more practice. Students who approached tasks with a fixed-ability orientation viewed the context as a reflection of how much ability they innately possessed in that area. The result is a student who is looking for situations that will not challenge their fragile self-image or make them feel "dumb." Dweck (2000) found that students with a growth pattern were more likely to persist in the face of failure and experience higher levels of academic achievement. The gap in achievement between the growth and fixed students was found to expand as students got older (Dweck, 2000).

Acceptance and Belonging vs. Alienation and Worthlessness

This second factor within the framework for "success psychology" reflects the degree to which any member feels wanted and part of the group and the degree to which one likes and accepts one's self. The more one feels accepted and acceptable, the more one will be able to express one's self, act authentically, and be fully present to others (Osterman, 2000). Self-acceptance is in contrast to self-aggrandizement, or a compulsion to please. A sense of belonging and acceptance is essential to a young person's mental health and ability to trust and take risks (Shann, 1999; Shindler, 2009). It comes in part from accepting messages from influential persons, practicing a positive approach and attitude, experiencing emotional safety, and feeling a part of a community.

Research has shown a relationship between a sense of belonging with acceptance and self-esteem (Osterman, 2000; Shann, 1999). Moreover, building a sense of classroom belonging and the sense of self and peer-acceptance has been shown to promote higher achievement (Dembrowsky, 1990; Sanders & Rivers, 1996).

Internal vs. External Locus of Control

The third factor in the construct of "success psychology" is defined by one's sense of internal causality and orientation toward personal responsibility. The more internal locus of control (LOC) we possess, the more we feel that our destiny is in our own hands. It could be contrasted to an external LOC or an orientation that views *cause* as an external factor and one in which life "happens to us." An internal LOC can be defined as the belief that one is the author of his or her own fate. An internal LOC comes from having a casual understanding of behavior and effect. It is learned from freely making choices and taking responsibility for the consequences of those choices. Through responsible action and accountability for those actions, the young person learns to attribute the cause of success or failure internally. Consequently, he or she feels a sense of power and responsibility and is able learn from his or her life experience. Another term we could use for internal LOC is "personal empowerment."

Research has drawn a strong relationship between levels of student self-esteem and sense of an internal LOC (Hagborg, 1996; Klein & Keller, 1990; Sharidan, 1991). Moreover, studies have shown repeatedly that students with higher degrees of internal LOC demonstrate higher levels of achievement (Auer, 1992; Park & Kim, 1998). In fact, having high levels of internal LOC have been shown to be an even more significant predictor of achievement than intelligence or socioeconomic status (Hagborg, 1996). In addition, higher internal LOC has also been shown to mediate the stress response (Ayling, 2009). Taken together these three interdependent variables make up a comprehensive explanation for why some students achieve more of their potential and why some contexts promote more students meeting more of their potential. These factors influence students' growth in all aspects of their lives, yet the effect of what takes place in schools make up a significant amount of their influence.

Results

The results of the study confirmed a strong relationship between the quality of school climate and academic achievement levels. Overall, at least seven study conclusions appear to be supported by the data. First, consistent with previous research, the data showed that the quality of school climate decreased as students moved from the elementary to secondary school level (elementary mean = 6.4, secondary mean

= 5.8). Second, achievement was shown to be highly correlated to overall mean school climate (SCAI) (r = 0.7). Third, achievement was also shown to correlate with all eight SCAI climate and function indicators, including a very substantive correlation coefficient for classroom discipline practices (r = 0.7). Fourth, all eight of the climate factors at each school tended to be highly inter-related. This suggests that factors are highly inter-dependent. Fifth, similarly, when socio-economic status was accounted for, the correlation between the SCAI scores and the achievement scores grew more prominent (r = 0.8). Sixth, intra-school data showed similar variation. The experience of climate for students within each school also varied relative to academic track of the student group. Students in lower performing tracks identified different practices being the norm than their higher track peers and experienced lower quality climates.

In general the high correlation coefficients (see Table 3) between school climate and achievement suggest that they are strongly related. While the direction of the causality between the two variables is not entirely indicated by the data, the substantial relationship between climate and SIM rating suggest that a conclusion can be drawn that, to a good degree, better climates led to achievement and were not simply a byproduct.

A scatter plot distribution of each school's SCAI rating (1-low to 9-high) by API scores (200-low to 1000 -high) shows a distinct pattern, as depicted in Figure 2. Higher levels of climate corresponded to higher levels of academic achievement.

When individual school climate ratings are graphed against achievement (i.e., API) scores, the 0.7 correlation can be seen in the scatter plot diagram (see Figure 2). The figure illustrates that as SCAI climate scores increase, so does achievement. In this data set there were no outliers from this trend line. Region A in Figure 2 represents a score combination of low climate and high achievement. Region B represents the inverse: low achievement and high quality climate. Cases in which a school scored in either of these regions of this graph were absent from this set of schools and appear unlikely to exist elsewhere.

Study Implications

The results of the study have both theoretical and practical implications. First, they offer a better theoretical understanding of the nature of student achievement, causes of the achievement gap, and the role that school climate plays. Second, they imply practical considerations for teachers and administrators attempting to increase student achievement and reduce the achievement gap at their schools.

Theoretical Implications

The findings of the study suggest a series of general and theoretical implications for the field of education

Table 3

Correlation Table Achievement by Climate Factors

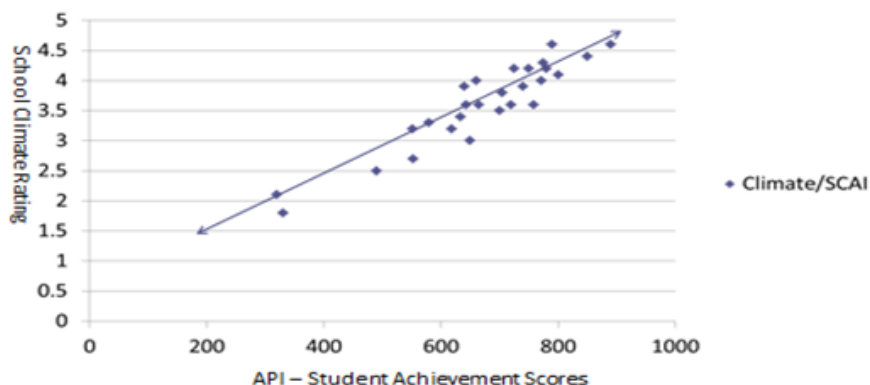|	SCAI - School Climate	API 2011 -14	Scale 4 Leadership	Scale 5 Discipline	Scale 6 Instruction	Scale 7 Att/Cult
SCAI - School Climate	---	+0.7	+0.7	+0.9	+0.7	+0.9
API 2007	**+0.7**	----	+0.5	**+0.7**	+0.6	+0.7
Adjusted Achievement Rating	**+0.8**	----	+0.6	**+0.8**	+0.7	+0.7
Similar School	**+0.3**	+0.1	**+0.3**	+0.1	+0.1	+0.1
Scale 5 Discipline	+0.9	+0.7	+0.8	----	+0.8	+0.8
Scale 6 Instruction	+0.7	+0.6	+0.8	+0.8	----	+0.8
Scale 7 Att/Cult	+0.9	+0.7	+0.8	+0.8	+0.8	-----

Figure 2. School climate score (SCAI) by student achievement (CA API). This line graph derived from a scatter plot of achievement scores by climate/SCAI

including the following:

- It appears higher quality climates lead to higher levels of student achievement.

- High student achievement test score means appear virtually impossible within the context of a school with a low quality/functioning climate.

- Dimensions of school climate were found to be highly correlated at each site indicating that dimensions are strongly interdependent. This implies that change within one discrete dimension will be influenced by the effects of the others.

- It is questionable to assume that implementing isolated, de-contextualized, add-on programs within a school where the climate is of fundamentally poor quality will achieve the desired effect.

- In the absence of a deliberate attempt to improve the quality of the climate and the function of a school, it can be assumed that quality of school climate will continue to get worse on average from grade to grade.

- Surface indicators of achievement may not offer enough information to judge progress toward school improvement. Measures of the systemic function level seem to be necessary as well.

- It appears that the use of practices that promote a "psychology of success" (POS) lead to greater achievement and higher quality climate, and those that promote a "psychology of failure" (POF) lead to underperformance.

- Intentionally using practices that promote climate function and POS and reducing those that promote

POF may likely increase achievement for all groups of students.

Practical Implications

The implications for educational practitioners include the following:

- Consider the consequences of acquiescence to the status quo. Consistent with previous research, the results of this study suggest that the default approach to teaching and school organization has in great measure created the conditions for low achievement and the achievement gap. If we do not make fundamental changes to what are doing, why would we assume that we will get substantially different results from what we have to date?

- Assess your school's climate. It appears that starting with a clear sense of the health and function level of the school is necessary to accurately diagnose what is and is not working. We need to know where we are before we can know where we want to go.

- Identify desirable and undesirable practices. As part of the school self-assessment, it makes sense to evaluate the practices at your school to determine which are promoting either a healthy or unhealthy school climate. Consistent with previous research, the findings of the study suggest that all areas of school performance are inter-dependent. Therefore every neglected or dysfunctional area of school performance is dragging down the larger effort to promote school achievement.

- Classify practices as either POS- and POF-promoting. As a collective set of stakeholders, identify which common practices at the school would best be

characterized as POS promoting and which are POF promoting. The appendices available from ASSC and the book *Transformative Classroom Management* (Shindler, 2009) will be a helpful starting point. However, the more this construct is developed as a personally meaningful concept to each member of the school community, the more effectively it will be implemented.

Below are list of some practices that can be inferred to create either a psychology of success or psychology of failure. Below are examples of some practices that promote a psychology of success:

- Cause-and-effect and clarity

- Process focus (especially with assessment)

- Student collective identity and sense of belonging

- Meaningful work

- Student responsibility, choice, and voice

- Emotional safety

Below are examples of some practices that promote a psychology of failure:

- Comparison and excessive competition

- Public shaming

- Assessment as a form of "gotcha"

- Punishments as consequences

- Meaningless work

- Emphasis on end products

- Colored cards and other gimmicks

- Bribes, praise, and other extrinsic rewards

When most educators examine the POS promoting list, few of the items surprise them. Most schools are attempting to promote at least some level of each of these outcomes. The differences between schools in this regard usually relate to the level of commitment and degree of deliberateness with which they attempt to actualize these outcomes at their site. However, when educators examine the POF promoting list, they recognize many of the items to be common practices used at their schools. In fact, often they find that these POF practices are classified within the taxonomy of what is considered "desirable practice." For example, few teachers are aware that their colored card or names on the board behavior modification systems or their use of personal praise and disappointment are actually promoting a POF, undermining the prospects of each student's long-term achievement and promot-

ing the expansion of the achievement gap. In most cases, the greatest effect on climate as well as achievement will likely come from the practices that schools cease doing rather than what they add to what they are already doing.

Reflect on limiting personal assumptions. When we, or other members of the school, use phrases such as "this is what these students need," we need to reflect on what is being implied. It often implies that we assume that low performing students need to be taught with school level 1/POF-promoting methodologies. The use of these practices can seem necessary, as these students may respond to that form of treatment in a way that makes everyone most comfortable. Yet, the results of this study supports earlier research that suggests that teaching *any* students in a level 1 (i.e., high conformity, lower level thinking, shame-based) context actually promotes lower levels of achievement and an expansion of the achievement gap over time. Unfortunately many well-intentioned teachers are working hard at promoting low achievement and an achievement gap under the assumption that what they are doing is best for the students with whom they work (i.e., they mistakenly assume that region A results are possible). When we use POS-promoting practices, they have the most significant impact on those that lack a POS. When we use POF-promoting practices, we reinforce POF in those that are least resilient and most susceptible to their ill effects. The data from this study suggests that the practices that define the level 3 category in the ASSC/SCAI will lead to the highest level of achievement and greatest level of POS for all students.

Conclusion

We have all heard someone make the statement that in so many words "teaching is not rocket science." Yet, it seems that producing high achievement in traditionally low-achieving schools and solving the achievement gap may be on that order. It may require solutions that require thinking that goes far beyond where common sense has led us up to this point. It may require a broader and deeper perspective on the problem and a rethinking of some basic design thinking in the system. An understanding of the role school climate plays in the development of student achievement appears to be a critical piece of that effort.

References

Auer, C. J. (1992). *A comparison of the locus of control of first and second grade students in whole language, basal reader, and eclectic instructional approach classrooms* (Doctoral dissertation). Retrieved from Dissertation Abstracts International.

Ayling, G. (2009, in submission) Report of an adolescent transition, a possible intervention for the stress response and diseases in adult life. *International Journal of Epidemiology.*

Benham, M. J. (1993). *Fostering self–motivated behavior, personal responsibility, and internal locus of control*. Eugene, Oregon. Office of Educational Research and Improvement (ERIC Document Reproduction No. ED 386 621).

Dembrowsky, C. H. (1990). *Developing Self-Esteem and Internal Motivation in At Risk Youth. Practicum Paper* (ERIC Document Reproduction No. ED 332 130).

Dweck, C. (2000) *Self-Theories: Their role in motivation, personality and development*. Lillington, NC: Psychologists Press.

Dweck, C. (2006) *Mindset: The new psychology of success*. Lillington, NC: Psychologists Press.

Freiberg, H.J., Driscoll, A., & Knights, S. (1999). *School climate*. Bloomington, IN: Phi Delta Kappa.

Fullan, (2003) Leadership for the 21st century: Breaking the bonds of dependency. *Educational Leadership*. *55*(7), 6-10.

Hagborg, W. J. (1996). Self-concept and middle school students with learning disabilities: A comparison of scholastic competence subgroups. *Learning Disability Quarterly. 19*,(2), 117-26.

Hoy, W., & Hannum, J. (1997)   Middle School Climate: An empirical assessment of organizational health and student achievement. *Educational Administration Quarterly, 33*(3), 290-311.

Jones, A., Shindler, J., Cadenas, H., Taylor, C. (2003, January) *Transcending traditional school assessment: Examining the efficacy of a participant driven school climate assessment and improvement system*. Presentation at the American Association of the College Teachers of Education. New Orleans, LA. January 25-27.

Klein, J. D., and Keller, J. M. (1990). Influence of student ability, locus of control, and type of instructional control on performance and confidence. *Journal of Educational Research*, *83*(3), 140-46.

Kober, N. (2001) *It takes more than testing: Closing the achievement gap*. A Report of the Center on Education Policy. Washington D.C. (ERIC Reproduction Service Number ED454358)

Loukas, A. & Robinson S. (2004). Examining the moderating role of perceived school climate in early adolescent adjustment. *Journal of Research on Adolescents, 14*(2).

National Assessment of Educational Progress. (2008). *Online report*. Retrieved from http://nces.ed.gov/nationsreportcard/lttnde/criteria.asp

Norton, M.S. (2008) *Human resources administration for educational leaders*. New York: Sage.

Osterman, K.F. (2000) Students' need for belonging in the school community. *Review of Educational Research, 70(3)*, 323-367.

Park, Y., & Kim, U. (1998) Locus of control, attributional style, and academic achievement: Comparative analysis of Korean-Chinese, and Chinese students. *Asian Journal of Social Psychology, 1*(2), 191-20.

Sanders, W., & Rivers, J. (1996). *Cumulative and residual effects of teachers on future student academic achievemen*t. Knoxville, TN: University of Tennessee Value-Added Research and Assessment Center.

Shann, M. H. (1999). Academics and a culture of caring: The relationship between school achievement and prosocial and antisocial behaviors in four urban middle schools. *School Effectiveness and School Improvement, 10(4),* 390-413.

Sharidan, M. K. (1991). Self-Esteem and competence in children. *International Journal of Early Childhood, 23*(1), 28-35.

Shindler, J. (2009) *Transformative Classroom Management*. John Wiley & Sons. Chappaqua, NY.

Shindler, J., Jones, A., Taylor, C., & Cardenas, H. (2004). *Does seeking to create a better classroom climate lead to student success and/or improved teaching? Examining the relationship between pedagogical choices and classroom climate in urban secondary schools*. Paper presented at the AERA, San Diego.