School Climate in Middle Schools: Culture Matters!

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Abstract

With the growing diversity in American classrooms and the current focus on numerically-significant subgroups, evaluators of K-12 programs are keenly aware of the need to understand differing perspectives represented by various ethnic and cultural groups. Underlying ethnically-based achievement gaps are factors that include program access and availability of services, cultural perspectives on education and schools, and literacy challenges. Differing expectations of the educational system are found in different cultures, including perceptions of teachers as bearers of specific expertise and schools as a means of career preparation and the subsequent positioning of students in the socioeconomic continuum. It is therefore not surprising that students would have varying perspectives on school cultures, and that their expectations would be reflected in various measures of school climate and culture.

As part of a grant-funded program to support character development in middle schools, students were asked to complete an annual survey on school climate, character development, and relevant practices among faculty and staff. Between 2,000 and 7,000 students from 9 middle schools complete the instrument each year, along with responses to demographic questions on gender, race/ethnicity, and grade level. Results for 2007-08 and 2008-09 underwent analysis to determine the impact of grade, gender, race/ethnicity, and school of attendance on student perspectives. All variables in the model were statistically significant; the interaction of ethnicity by school was also significant at the .001 level. In particular, responses of students identifying themselves as Hispanic (here described as Latino/a) varied considerably from self-identified 'White' or 'Asian' students. Differences were seen overall, and on several subscales. Further analyses of these three ethnic subgroups showed that students responded differentially to the survey questions based upon race/ethnicity, and had differing priorities when assessing school culture. This presentation – an incomplete paper – discusses the questions raised by these results focusing on culturally-based expectations of education and schools and culturally-based interpretations of survey questions.

The concept of school climate or 'the quality and character of school life' (National School Climate Council, 2007) – has been a topic of study for several decades. Relationships to student behavior (Rutter, et al., 1998), achievement and adjustment (Haynes, Emmons, and Ben-Avie, 1997) and self-concept (Caplin, 1969) have shown a strong relationship between the experiences of students on their school campuses and positive student outcomes. More recently, research has determined that a focus on promoting students' social, emotional and civic competence is key in supporting academic achievement (Cohen, Fege, & Pickeral, 2009).

Factors at many levels have been found to influence student perceptions of school climate. One recent study determined that variables at multiple levels (school, classroom and individual) all impact ratings of climate in schools (Koth, Bradshaw and Leaf, 2008). Individual level factors such as race, gender and age appear to have the greatest impact on climate perceptions; indeed it may be that perceived school climate predicts, in a uni-directional fashion, psychological or behavioral adjustment in middle school students (Way, Reddy and Rhodes, 2007.)

It is not surprising that race and ethnicity would impact student perceptions of school climate. Cultural disconnects between home culture and the expectations of many educational settings have been described for African-American, Asian and Latino students, among other groups (e.g. Tyler et al., 2008). This theory suggests that the greater the difference between home and school culture, the stronger the need for students to 'disconnect' from home practices and thus the more difficult it becomes for students to focus on academic issues. Issues that potentially contribute to cultural disconnects include the maintenance of traditional pedagogical styles that ignore culturally-based teaching methods (Garcia, 2007) and high-stakes testing environments that emphasize individual success over collective accomplishments (Ruiarc, 2009).

As evaluators, survey development practices have long been based on the goal of cultural neutrality. A 'culture-free' test is thought to minimize the impacts of any cultural experiences by examining items for inherent bias that may arise due to limited exposure or varied life experiences. Whether this goal is possible or even preferable is open to debate; indeed the issue was addressed a century ago when Franz Boas stated that "mind, independent of experience, is inconceivable" (Boas, 1911). One differing perspective is that the clarification, rather than the elimination, of cultural perspectives should be a critical goal. Padilla (2005) cites the inherent problems in using the majority culture as a standard by which other groups are judged, and suggests a non-comparative examination of ethnic differences. Instead, he proposes an exploration of intra-group differences including socio-economic status, level of acculturation, and country of origin so as to illuminate important explanatory factors.

One ongoing program provided an opportunity to examine cultural differences in survey responses in middle school students. The Institute for Character Education (ICE), a program funded by the U.S. Department of Education and administered through the Orange County Department of Education (OCDE) in Orange County, California, has a six-year history of providing professional development in character education to K-12 teachers and administrators.

In the ICE Professional Development Program, character education is infused within the academic curriculum in all subject areas, and focuses on the core character elements of respect, responsibility, and integrity. Using research-based character education practices, the specific intention for ICE is to teach middle school personnel effective strategies to encourage student voice and connectedness on campus, thereby increasing students' engagement in their academic learning, and aiding student transition into and out of middle school. As part of the data-collection for this program, randomly-selected students in participating middle schools take annual climate surveys to assess school-wide program impacts. The data from surveys administered in academic years 2007-08 and 2008-09 are used here to examine the cultural differences evident in student survey responses.

Methods

Sample

This study is set in Orange County, California which is the second largest county in California with nearly a half million culturally-diverse students. It is a 'minority majority' county in which students of color comprise over 50% of current K-12 students. The Institute for Character Education (ICE) provides support to 20 middle schools that collectively serve over 20,000 students annually in the 6th through 8th grades. The middle schools are divided into two cohorts, the initial 2007-08 cohort includes 9 middle schools (including two private schools), and the 2008-09 cohort adds an additional 11 middle schools (20 schools altogether). Results reported here are for the nine cohort 1 schools for which two years of data were available. The instrument was administered each fall to a randomly-selected sample of students. Student samples were generated by selecting classrooms randomly from each school's master schedule of English and social studies classes. Administrators were notified of the selected classrooms and survey dates, and provided with passive consent letter in English and Spanish (and Vietnamese in 2008) to distribute to parents. Parents who did not want their child to take the student surveys contacted the school principal or the evaluator to remove their child from the study. Less than 10 such requests were received each program year. Demographic characteristics of the two surveyed cohorts are below (Table 1).

Table 1. Student Demographic Information

	2007-08 (n=2908)	2008-09 (n=2580)
Grade Level		
6th	331	265
7th	1,311	1088
8th	1,241	1225
Did not specify a grade level	25	2
Gender		
Male	1,419	1309
Female	1,379	1222
Did not specify a gender	110	49
Ethnicity		
African American/ Black	40	40
Asian/ Pacific Islander	276	211
Caucasian/ White	832	690
Hispanic/ Latino/a	1,067	946
Native American	42	23
Other ethnicity	165	232
Multiple ethnicities	388	409
No ethnicity specified	98	29

Instrumentation

The Character in Action Survey, or CiAS, (Davidson & Khmelkov, 2006) was administered during a normal class period along with a second measure of academic motivation. This self-report survey measures students' perceptions of various aspects of school climate and character development, as well as relevant practices among faculty and staff. The CiAS comprises 64 questions that measure school culture on a 5-point Likert-type scale (1 being the lowest and 5 being the highest). The overall survey and its theoretically-derived subscales have reported Cronbach's alpha scores of 0.80 or higher, both overall and for the seven subscales:

- *Pro-Social Attitudes*: the degree to which students believe that they live out a range of pro-social values
- *School Social Climate*: the extent to which students feel safe in the school
- *Social Capital*: the perceived degree of support provided by adults
- *Acceptance & Attachment*: the perceived level of caring relationships among students and teachers, and the degree of diversity acceptance among students
- *Personal and Collective Responsibility*: the extent to which students challenge themselves and others to do their best in living out the norms of the caring community in the school/classroom
- *Pro-Social Behavior*: students' ethical behaviors seen on campus
- *Character Development Experiences*: students' perceptions of the level of character education practiced by adults on the school campus

Analysis methods

Data Cleaning. Data were first examined and records that had multiple or out-of-range grade levels, multiple responses for gender and/or selection of all ethnic/racial categories were removed. Students were allowed to mark all applicable racial/ethnic categories. We re-classified identifiable 'Other' ethnicities (e.g. "Filipino", "Mexican") into their presumptive categories, leaving a final 'Other' category of only 58 individuals who were mostly of Middle-Eastern descent. For multiply-identified individuals we recoded all individuals into an additional category – "Multiple". To ensure anonymity student identifiers were not included on the surveys, and so student matching was not possible. (Note – as over 90% of Hispanic students in Orange County have families from Mexico or other Central American countries, the term 'Latino/a' will be used for the remainder of this paper.)

Statistical Methods. For our initial investigation of 2007-08 data we examined aggregate and school-specific differences in response patterns by gender, grade level, and ethnicity. Outcome variables included both the overall score on the CiAS and scores for each of the 7 subscales. We used T-tests or ANOVA to identify statistically significant inter-group differences both at the aggregate level and for each school individually. Following these initial analyses, we added the variables of school and number of years in the program to assess differences in groups, using *post hoc* comparisons to determine the groups responsible for significant differences.

Subsequently, our analysis of data from two years included Chronbach's alpha to determine full scale and subscale reliability, and principal components analysis using varimax rotation. All procedures were run using SPSS analytical software (version 17).

Results

Year 1

Our first analyses included only student responses from Year 1. Inter-group comparisons showed statistically significant differences based on gender and grade level, with female students and younger students scoring significantly higher on overall and subscale means (for all analyses, $p < .001$).

Through ANOVA, we also examined ethnic/racial differences to compare all ethnic groups – a total of 7 categories as described above. Trends in these data led us to re-compare the three largest groups: White, Asian, and Latino/a. These analyses revealed significantly lower ratings for self-reported Latino/a students than for students in the White or Asian groups (Table 3), both overall and on each subscale. While not shown here, these results were replicated in Year 2.

Table 3. Year 1 student responses by ethnicity and subscale.		N	Mean	Std. Deviation	F (sig)
Prosocial Attitudes	Asian or Pacific Islander	276	3.71	0.584	96.76 (.000)
	White (Caucasian)	832	3.74	0.649	
	Hispanic (Latino/a)	1067	3.34*	0.689	
	Total	2175	3.54	0.69	
School Social Climate	Asian or Pacific Islander	276	3.57	0.986	8.024 (.000)
	White (Caucasian)	832	3.6	1.059	
	Hispanic (Latino/a)	1067	3.41*	1.056	
	Total	2175	3.5	1.052	
Social Capital	Asian or Pacific Islander	276	3.65	0.705	18.919 (.000)
	White (Caucasian)	832	3.7	0.746	
	Hispanic (Latino/a)	1067	3.50*	0.754	
	Total	2175	3.59	0.751	
Acceptance & Attachment	Asian or Pacific Islander	276	3.38	0.691	18.32 (.000)
	White (Caucasian)	832	3.29	0.714	
	Hispanic (Latino/a)	1067	3.14*	0.657	
	Total	2175	3.23	0.689	
Personal & Collective Responsibility.	Asian or Pacific Islander	276	3.08	0.769	14.717 (.000)
	White (Caucasian)	832	2.93	0.801	
	Hispanic (Latino/a)	1067	2.81*	0.746	
	Total	2175	2.89	0.775	
Prosocial Behavior	Asian or Pacific Islander	276	3.59	0.621	71.026 (.000)
	White (Caucasian)	832	3.58	0.66	
	Hispanic (Latino/a)	1067	3.24*	0.651	
	Total	2175	3.41	0.671	
Character Develop. Experiences	Asian or Pacific Islander	276	3.43	0.764	31.53 (.000)
	White (Caucasian)	832	3.31	0.816	
	Hispanic (Latino/a)	1067	3.06*	0.868	
	Total	2175	3.21	0.847	
OVERALL	Asian or Pacific Islander	276	3.39	0.437	62.276 (.000)
	White (Caucasian)	832	3.36	0.483	
	Hispanic (Latino/a)	1067	3.14*	0.464	
	Total	2175	3.26	0.481	

*Significantly lower by Tukey HSD post hoc test

Comparisons by school

The results above suggested a further investigation of Latino/a student responses, and results for each of the nine middle schools were examined separately in the hopes that explanatory patterns might emerge. We inspected results by ethnic mix, hypothesizing that students at majority Latino/a schools might perceive of school climate more positively. We found no patterns; at one majority Latino/a school (73%) students reported a significantly higher mean on one subscale, in another school with similar demographics (76%) another subscale was significantly higher, and at a third school with only 40% Latino/a students, yet a third subscale was scored significantly higher by Latino/a students.

Year 1 to Year 2 Comparisons

To investigate one goal of the funded character education project -- to increase student perceptions of school climate over time – we then examined aggregated results for change over time. Results (Table 4 below) showed that the overall mean and two subscale means increased significantly from the first to the second year.

Table 4. Cohort 1 CiAS Results – All Students

	2007-08	2008-09
Number of Respondents	2,908	2,581
Overall Survey Mean	3.26	3.31**
Survey Subscale Means*:		
Pro-Social Attitudes	3.54	3.39**
School Social Climate	3.50	3.38**
Social Capital	3.59	3.55
Acceptance & Attachment	3.23	3.23
Personal & Collective Responsibility	2.90	2.90
Pro-Social Behavior	3.42	3.41
Character Development Experiences	3.20	3.19

*Subscale and overall scores range from 1(most negative) to 5 (most positive)
**p<.05

Multivariate Analyses

Returning to our examination of ethnic differences, and in particular upon differences between Latino/a students and others, we assessed the impact of ethnicity (Latino/a vs other), school, and program year on perceived climate, while controlling for grade and gender. We ran analyses separately for each subscale and for the overall score. The two variables to appear most frequently as significant factors in predicting school climate were (1) school site and (2) the interaction of school site and ethnicity (Table 5).

Table 5. Tests of Between-Subjects Effects
(p-values)(N=4372)

Source	Overall	PSATT	CLIMATE	SOCCAP	ACCEPT	RESPON	PSBEH	CDEXP
GRADE	.000	.000	.000	.000	.000	.000	.000	.000
GENDER	.000	.000	.000	.000	.000	.000	.000	.000
LatOther	.007	.000	.000	.075	.348	.682	.000	.293
SCHLCDE	.000	.000	.000	.000	.000	.000	.000	.000
YEAR	.007	.001	.240	.890	.175	.250	.871	.753
LatOther * SCHLCDE	.000	.013	.031	.000	.000	.004	.007	.000
LatOther * YEAR	.580	.742	.729	.706	.176	.567	.554	.930
SCHLCDE * YEAR	.034	.000	.000	.003	.023	.266	.048	.063
LatOther * SCHLCDE * YEAR	.531	.587	.893	.562	.292	.410	.916	.795

(NOTE – shading indicates that differences were
not statistically significant.)

LatOther = Latino or White/Asian/Other
SCHLCDE = School Code

Analysis of inter-ethnic differences – scaling

In considering ethnic differences in survey results, one important consideration is to determine that survey constructs are interpreted similarly by the various groups being surveyed (Padilla, 2004). We undertook two analyses with this in mind – reliability measurement (Chronbach's alpha) and principal component analysis. In both procedures we examined ethnic groups separately.

Reliability by Ethnicity. We ran separate reliability analyses for each of the 6 ethnic groups represented in the study, and found that with one exception (Acceptance & Attachment, Latino/a subgroup) all scales had alpha => .70 (Table 6). However, in relation to the 'white' reference subgroup, 4 of the subscales had alphas more than .025 lower for two or more subgroups. These subscales were Pro-social attitude, Social Capitol, Acceptance and Attachment, and Prosocial Behavior. These findings provided initial evidence that CiAS items were being interpreted differently by students in the various ethnic groups, and with that evidence we proceeded to examine student responses more closely.

Principal Components Analysis by Ethnicity. Principal Components Analysis is a relatively straight-forward means to determine the internal structure of the data such that the variance in the data "hangs together" in related elements. The first component extracted from the data contains the most explanatory value, and each subsequent component (a) is orthogonal, or statistically unrelated to the preceding components and (b) is able to explain less variability. If internal structures differ for certain groups, it implies that the groups interpret and/or value the information differently. We examined the data structure for the three major groups represented – White, Asian, and Latino/a. We found that the structure was slightly different than what was presented by the defined CiAS subscales, and that differing priorities emerged for each ethnic/racial group.

Using an eigenvalue of 1.5 as a cut-point, we found five or six factors for each group (Table 8). Two of these factors were nearly identical to the defined CiAS subscales (School Social Climate and Character Development Experience), but other subscales emerged with a different structure.

Prosocial Environment: This factor emerged as the first component for all three groups, combining most elements of the CiAS' Prosocial Attitude with some prosocial behaviors. These elements reflected positive attitudes and behaviors observed in fellow students such as empathy and justice, and a willingness to offer assistance.

Student relationships: This component specifically related to student-to-student interactions that occurred at school such as willingness to share or to offer support, and emerged as either the second or third component for each group.

Adult Relationships: Measurement of a student's *personal* relationship to adults in the school (e.g. personal encouragement, teacher attention) mirrored the CiAS' identified subscale of Character Development Experience.

Adult Behaviors: Assessment of *general* interactions with students (e.g. helping, listening) emerged as a category distinct from personal interactions with adults on campus.

Safety: The presence of verbal abuse, assault, and stealing on campus was closely aligned to the CiAS subscale of School Climate.

Personal Negative Behaviors: Analysis revealed a separate factor focused on personal instances of cheating, breaking school rules, avoiding work, and making fun of others.

Analysis by ethnic group revealed differences in component loadings for each group (Table 8). While the initial component for each group was the same (Prosocial Environment), subsequent factors varied, as did the total amount of explained variance.

Table 8. Principal Components Analysis by Ethnic groups

	White	Asian	Latino/a
Factor 1 (% var. expl.)	Prosocial envir. (24.1%)	Prosocial envir. (21.8%)	Prosocial envir. (20.3%)
Factor 2	Student Relationships (6.1%)	Student Relationships (6.3%)	Adult Relationships (5.9%)
Factor 3	Adult Behaviors (4.5%)	Adult Relationships (4.4%)	Student Relationships (4.5%)
Factor 4	Adult Relationships (3.8%)	Adult Behavior (3.8%)	Safety (3.7%)
Factor 5	Safety (2.7%)	Personal Negative Behaviors (3.0%)	Adult Behaviors (2.9%)
Factor 6		Safety (2.4%)	Personal Negative Behaviors (2.4%)
Total variance explained	43.5%	41.7%	39.8%

(All eigenvalues >1.5)

Discussion

School-wide differences

It appears clear from a number of analyses that the perceptions of students in this study varied by school site, as expected. It would indeed be surprising if all schools reported identical school climates, and would call into question the validity of the instrument. Of greater importance is that the interaction of ethnicity and school site had a more robust influence than ethnicity alone, and that the ethnic heterogeneity at a particular school site does not appear to be the predictive factor. As a case in point two schools with majority Latino/a student bodies had lower overall ratings than a third school with only 40% representation. It appears that a school's ability to embrace varying cultural perspectives is not fully measured in the CiAS; this issue may well be important to middle school students who are beginning to develop their self-concept. Middle school students of color most likely assess their school environments using both conscious and unconscious means, sensing or observing specific issues such as the need (or not) to set aside values and preferences used in their homes, the use culturally-appropriate pedagogies, and a sense that cultural exploration is encouraged rather than merely tolerated.

Ethnically-based expectations of schools and school climate

Our principal component analysis provide evidence that ethnicity plays a part in students' perceptions of their school. Data from the three groups examined (Asian, Latino/a, White)

described slightly different perspectives in their ratings of school climate. Examining the six top-most factors in school climate:

- Latino/a students uniformly accentuate safety issues while Asian and Anglo students did to a lesser degree;
- Anglo students emphasized general adult *behaviors* with more consistency than personal *relationships* with adults, while the Asian and Latino/a students emphasized personal relationships over general behaviors;
- Asian and Latino/a students stressed specific observations of negative behaviors while Anglo students did not.

From these observations, it is possible to craft a description of a school that would be perceived as more welcoming to Latino/a students. That school is likely to have adult staff who attend personally to the needs of students, where there are few incidents of verbal abuse or theft, and where students don't see other students breaking school rules or avoiding work. These descriptors are consistent with the Mexican and Central American perception of *educación*, whereby the ability to behave and show respect is a stated goal (Tyler et al., 2008).

It should also be noted that the components extracted for each ethnic group were nearly identical in item composition. This outcome argues against a language-based interpretation of these differences. If comprehension issues were responsible for the differences seen, factors would have varied in the item composition. Quite the opposite is true. Still, less variance is explained for Latino/a students than for students who described themselves as White. It is likely that additional factors are needed to fully describe what a positive school climate would look and feel like to a student who strongly identifies with Latin culture.

Next Steps and Discussion Questions

Much work is yet to be accomplished here. In this presentation to the American Evaluation Association, we intended to open up the discussion on ethnicity and school culture so as to create 'next steps' that would address critical questions. For example, a principal components analysis could be re-run with the new set of components/subscales. A new study could collect additional data from school staff and students to assess the level of cultural awareness that exists on each school campus. Interviews with students could confirm the emerging set of concepts that describe culturally-relevant school climate. We would like to pose two questions to begin this discussion:

- *What are the additional factors that are necessary to describe fully a culturally-relevant school climate?*

- *What contextual information, perhaps from observational and interview data, should be included to fully understand the school context with respect to ethnicity and climate?*

References

Alim, H. S. (2007). Critical hip-hop language pedagogies: Combat, consciousness, and the cultural politics of communication. *Journal of Language, Identity, and Education, 6*(2), 161.

Boas, F. (1911). *The Mind of Primitive Man.* New York: Macmillan.

Caplin, M. D. (1969). The relationship between self concept and academic achievement. *Journal of Experimental Education, 37*(3), 13-16.

Coffman, D. L., & BeLue, R. (2009). Disparities in sense of community: True race differences or differential item functioning? *Journal of Community Psychology, 37*(5), 547.

Cohen, J., Fege, A., & Pickeral, T. (2009). Measuring and improving school climate: A strategy that recognizes, honors and promotes social, emotional and civic learning The foundation for love, work and engaged citizenry. *Teachers College Record*. Retrieved October 10, 2009, from http://www.tcrecord.org/Content.asp?ContentId=15698

Garcia, E.E.(2005). Educating Mexican American Students: past treatment and recent developments in theory, research, policy and practice. In: *Handbook of Research on Multicultural Education (second edition*); James Banks & Cherry A. McGee Banks (eds,). New York: Jossey Bass.

Haynes, N.M., Christine Emmons, C., Ben-Avie, M. (1997). School climate as a factor in student adjustment and achievement. *Journal of Educational and Psychological Consultation*, Vol. 8, 1997

Koth, C. W., Bradshaw, C. P., Leaf, P. J. (2008). A multilevel study of predictors of student perceptions of school climate: The effect of classroom-level factors. *Journal of Educational Psychology, 100*(1), 96-104.

National School Climate Council (2007). *The School Climate Challenge: Narrowing the gap between school climate research and school climate policy, practice guidelines and teacher education policy*. Retrieved on June 1, 2009, from: www.schoolclimate.org/climate/policy.php

Padilla, A.M. (2005). Quantitative methods in multicultural education research. In: *Handbook of Research on Multicultural Education (second edition*); James Banks & Cherry A. McGee Banks (eds,). New York: Jossey Bass.

Ruairc, G. M. (2009). "dip, dip, sky blue, who's it? Not you": Children's experiences of standardised testing--a socio-cultural analysis. *Irish Educational Studies, 28*(1), 47.

Rutter,M., Giller, H., Hagell, A. (1998). *Antisocial Behavior by Young People*. New York: Cambridge University Press.

Tyler, K. M., Uqdah, A. L., Dillihunt, M. L., Beatty-Hazelbaker, R., Conner, T., Gadson, N., et al. (2008). Cultural discontinuity: Toward a quantitative investigation of a major hypothesis in education. *Educational Researcher, 37*(5), 280.

Way, N., Ranjini Reddy, R. and Rhodes, J. (2007). Students' perceptions of school climate during the middle school years: Associations with trajectories of psychological and behavioral adjustment. *American Journal of Community Psychology, 40*(3-4), 194-213.