

Reliability, Consistency, and Validity of the NYC DOE Environmental Surveys: A Preliminary Analysis

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In this document, we briefly summarize our analysis of the results of the 2008 Environmental Surveys for the New York City Department of Education (DOE). These surveys were given out to all parents and teachers within the DOE, as well as all students in grades six and higher. We measure various properties of these surveys using a number of metrics and methods. A set of accompanying tables is included with this document.

1. Reliability and Consistency

We first measure the reliability of the 2008 survey results by calculating Cronbach's alpha, a standard measure of instrument reliability, separately for each of the survey's four domain scores (Academics, Communication, Engagement, and Safety) and each group of respondents (students, parents, and teachers). We have also gone a step further and separated Elementary/Middle schools from High Schools. These results are presented in Table 1. In general, we find very high levels of reliability, with alpha higher than 0.9 for nearly every case. The only occurrences of alpha lower than 0.9 were for student responses to questions on communications (alpha = 0.87 overall, 0.87 for middle school students, and 0.85 for high school students). This result is not driven by lower average consistency among the questions but simply by fewer questions (six) for this domain-response group cell.

We then examine the correlation among scores on the environmental survey across domains within respondent groups and across respondent groups within a single domain (Table 2). We find very high correlations across the four domain scores within each subject group, with coefficients of correlation generally ranging from 0.75 to 0.95 and similar levels of correlation for each of the three respondent groups. Turning to the correlation across respondent groups, we find a stronger relationship between parent and student responses than between teacher responses

and the responses of either of the other two groups. The one exception is for the Safety domain, where teacher and student responses are in relatively close alignment.

We find a fairly high degree of correlation of survey domain scores across years (Table 3) in nearly every case we examine, supporting the notion that these surveys provided a fairly consistent measure over time. Two facts which are worth noting are that (1) the relationship over time was generally stronger for Safety and Respect than for the other three domains and (2) correlation over time for student responses on Academics and Communications were noticeably lower for middle school students than for high school students. In addition to the analysis by respondent group shown in Table 3, we examine the correlation over time in total scores (across all four domains) separately by the progress report grade schools received in 2007 (Table 4). Here, we find somewhat weaker correlations across time for schools receiving lower progress report grades. Interestingly, the correlations over time were particularly low for high schools receiving a C grade on their 2007 progress report.

2. Internal Validity

We examine the internal validity of the environmental survey results by performing a factor analysis on the average score for all questions asked to each respondent group. If the four domains were truly distinct traits of the school environment and the questions on the survey matched with (and only with) the domain to which they were directed, then the factor analysis should find four significant factors with each question loading largely onto the single trait for which it was directed. We limit the analysis to only retain factors with an Eigenvalue greater than or equal to one; this is a common bar used in factor analysis in order to isolate traits which have significant power to explain covariance among survey items. We also separate high schools and elementary/middle schools, because survey respondents for high schools answered an additional question regarding course selection and occupational/educational planning.

The results of our analysis are shown in Tables 5a through 5f. Each table contains the results for a single respondent group (students, parents, and teachers) and type of school (elementary/middle or high school). For each question, we report the degree to which its response loads on any factor if the loading was greater than or equal to 0.25 in absolute value. This allows us to focus only on relationships that are modestly strong. We also report each question's "uniqueness", which indicates the portion of its total variance not explained by the

common factors. Only two questions—those on the availability of courses and activities asked to elementary/middle school teachers—did not meet the 0.25 criterion for any factor and, not surprisingly, have high values for uniqueness.

Interestingly, the results do not support the notion that the four domains are distinct traits identified solely by the questions directed at them. While our findings vary slightly across respondent groups and school types, we generally find one major factor which we interpret as corresponding to an overall sense of school quality. This factor has by far the greatest explanatory power in the data, and nearly all of the questions load greatly onto this factor. This suggests that the separate concepts of Academic, Communication, Engagement, and Safety domains may not be warranted given the manner in which respondents answer the current set of survey questions.

However, we also find additional significant, though relatively minor, factors which vary across response groups. There is no exact interpretation of these findings, but we try to label these factors as best we can. For parents of elementary/middle school students (Table 5a), we find a second factor related to student misbehavior and a third factor related to information given to parents on school activities. For parents of high schools students (Table 5b), we find a second factor negatively related to how well students and parents are treated by the school, and a third factor positively related to student engagement.

For middle school students (Table 5c), we find a second factor related to the difference between the attitudes and actions of school personnel and the attitudes and actions of students, a third factor related to the receipt of challenging and/or complex work, and a fourth factor related to personal connection to the school by its students. For high schools students (Table 5d), we find a second factor related to how well schools fulfill students' basic academic needs (as opposed to focus on safety), a third factor related to personal connection to the school by its students, a fourth factor on how "tough" the school is on its students, and a fifth on how much the school focuses on basic safety and basic academics.

For teachers of elementary/middle school students (Table 5e), we find a second factor related to administrators focus on safety issues to the possible detriment of student learning, a third factor related to how supportive teachers are of one another, and a fourth factor related to teachers' use of data and their attempts to enlist the help of parents in difficult circumstances. For teachers of high schools students (Table 5f), we find a second factor positively related to

safety and respect but negatively related to administrative support, a third factor negatively related to support among teachers, a fourth factor negatively related to administrative competence, and a fifth factor which defies meaningful categorization (but is of noticeably less importance than the other four factors).

3. External Validity

There can be no single test of the external validity of the environmental surveys since they were not designed with a single purpose of measurement. However, we can ask how the results of the environmental surveys agree or disagree with other measures of school quality. Specifically, we measure the correlation between survey domain scores and four other measures of school quality: the progress report overall score (not including the environmental survey score and the additional credits), Quality Review score (i.e., Undeveloped = 1, Proficient = 2, Well-Developed = 3), the school's status with regard to No Child Left Behind (i.e., Restructuring = 0, Needs Improvement = 1, In Good Standing = 2), and the number of school suspensions per student enrolled. In the case of suspensions, we only examine its correlation with the survey score for Safety. We perform this analysis separately for elementary/middle schools and high schools, and focus on the environmental survey score across all respondent groups as well as for each respondent group separately. We use 2007 survey data for this analysis; progress report grades have not been released for high schools at this time.

The results are shown in Table 6. We find significant positive relationships between the total score on the environmental survey results and the progress report grade, the Quality Review, and NCLB status. We also find a strong negative relationship between scores on the Safety portion of the survey and the number of suspensions per student. These relationships are similar for the two types of schools, though there is a somewhat stronger relationship between the survey scores and the progress report grades for high school. This may reflect greater variability in student progress on elementary and middle school tests relative to the high school progress outcomes. Thus, overall, the evidence suggests that the environmental survey has validity as a multi-dimensional measure of school quality.

There are a few instances in which these relationships are positive but noticeably weak. For example, the relationship between NCLB status and high school teachers' responses to questions directed at Academics, Communications, and Engagement are all quite low. Also, at

both types of schools, responses to questions directed at Communication for students and responses to questions directed at Engagement for parents both had weak relationships with the Quality Review.

Table 1: Cronbach's alpha reliability measure by survey dimension, 2008 Survey

		Academic			
		Expectations	Communications	Engagement	Safety
Overall	alpha	0.96	0.94	0.96	0.98
	#items	33	24	29	48
Parent	alpha	0.97	0.97	0.91	0.96
	#items	6	8	8	11
Teacher	alpha	0.95	0.92	0.95	0.95
	#items	17	10	10	17
Student	alpha	0.92	0.87	0.95	0.97
	#items	10	6	11	20
Elementary/Middle Parent	alpha	0.96	0.96	0.90	0.95
	#items	5	8	8	11
Elementary/Middle Teacher	alpha	0.96	0.92	0.96	0.96
	#items	16	10	10	17
Elementary/Middle Student	alpha	0.92	0.87	0.94	0.98
	#items	9	6	11	20
High School Parent	alpha	0.96	0.97	0.90	0.96
	#items	6	8	8	11
High School Teacher	alpha	0.95	0.91	0.94	0.93
	#items	17	10	10	17
High School Student	alpha	0.93	0.85	0.94	0.98
	#items	10	6	11	20

Note: Elementary/Middle schools are those that appear in the corresponding school report data. High Schools are those coded as "High School" or "Middle/High School" in the 2008 survey data

Table 2: Correlation between respondent type, 2008 Survey

	Parent				Teacher				Student			
	Academics	Engagement	Comm.	Safety	Academics	Engagement	Comm.	Safety	Academics	Engagement	Comm.	Safety
Parent												
Academic Expectations	1											
Engagement	0.85	1										
Communication	0.93	0.88	1									
Safety	0.85	0.81	0.85	1								
Teacher												
Academic Expectations	0.48				1							
Engagement		0.32			0.94	1						
Communication			0.37		0.91	0.93	1					
Safety				0.59	0.85	0.81	0.74	1				
Student												
Academic Expectations	0.71				0.51				1			
Engagement		0.61				0.31			0.91	1		
Communication			0.68				0.47		0.83	0.83	1	
Safety				0.76				0.70	0.80	0.83	0.75	1

Table 3: Correlations between 2007 and 2008 survey data

			Academic Expectations	Communication	Engagement	Safety
All Schools	Total Score	corr N=1302	0.73	0.77	0.73	0.87
	Parent Score	corr N=1302	0.69	0.74	0.73	0.81
	Teacher score	corr N=1284	0.67	0.62	0.64	0.76
	Student score	corr N=754	0.53	0.70	0.77	0.82
High Response Rate Schools	Total Score	corr N=663	0.76	0.80	0.76	0.89
	Parent Score	corr N=650	0.64	0.73	0.70	0.70
	Teacher score	corr N=632	0.75	0.74	0.73	0.82
	Student score	corr N=389	0.49	0.68	0.75	0.81
Elementary/Middle Schools	Total Score	corr N=1011	0.72	0.73	0.70	0.86
	Parent Score	corr N=1011	0.65	0.70	0.69	0.79
	Teacher score	corr N=997	0.68	0.62	0.65	0.77
	Student score	corr N=473	0.47	0.60	0.71	0.78
High Schools	Total Score	corr N=267	0.77	0.73	0.73	0.85
	Parent Score	corr N=267	0.68	0.73	0.63	0.77
	Teacher score	corr N=263	0.66	0.59	0.60	0.70
	Student score	corr N=260	0.78	0.84	0.79	0.89

Note: High response rate school for the total score correlation is defined as those with survey response rate in 2007 larger or equal than the median average response rate of the 3 respondent types. For the respondent type scores, high response rate schools are those with survey response rate in 2007 larger or equal than the median for the corresponding respondent type. Elementary/Middle schools are that appear in the corresponding school report data in both years. High Schools are those schools that appear in the corresponding school report data in 2007 and were coded as "High School" or "Middle/High School" in the 2008 survey data.

Table 4: Correlations between 2007 and 2008 survey data by Progress Report Grade in 2007

Elementary/Middle Schools			Academic Expectations	Communication	Engagement	Safety
A Schools in 2007	Total Score	corr N=226	0.76	0.78	0.74	0.86
B Schools in 2007	Total Score	corr N=372	0.76	0.78	0.73	0.89
C Schools in 2007	Total Score	corr N=259	0.73	0.74	0.69	0.87
D Schools in 2007	Total Score	corr N=88	0.68	0.70	0.68	0.84
F Schools in 2007	Total Score	corr N=42	0.64	0.67	0.58	0.84
High Schools						
A Schools in 2007	Total Score	corr N=49	0.82	0.75	0.66	0.86
B Schools in 2007	Total Score	corr N=78	0.82	0.81	0.83	0.90
C Schools in 2007	Total Score	corr N=52	0.51	0.48	0.51	0.54
F/D Schools in 2007	Total Score	corr N=19	0.66	0.59	0.51	0.68

Note: Elementary/Middle schools are that appear in the corresponding school report data in both years. High Schools are those schools that appear in the corresponding school report data in 2007 and were coded as "High School" or "Middle/High School" in the 2008 survey data

Table 5a: Factor analysis--Parents in Elementary/Middle Schools, 2008 survey

				Factor loadings for survey items greater than 0.25 and less than -0.25				
Construct	Item	Question	Eigenvalues:	Factor 1 21.05	Factor 2 1.64	Factor 3 1.21	Uniqueness	
Academic	5a	Agree/disagree: a.School has high expectations for my child.		0.83			0.24	
Expectations	5d	Agree/disagree: d.My child is learning what he/she needs to know.		0.88			0.18	
	13a	Satisfaction with: a.The quality of your child's teacher(s) this year.		0.87			0.19	
	13b	Satisfaction with: b.The level of assistance your child receives when he/she needs extra help w/ classwork.		0.91			0.16	
Communication	13e	Satisfaction with: e.The education your child has received this year.		0.92			0.14	
	2d	Agree/disagree: d.The school keeps me informed about my child's academic progress.		0.90			0.14	
	2e	Agree/disagree: e.The school contacts me when my child breaks rules.		0.77	-0.33		0.27	
	2f	Agree/disagree: f.The school contacts me to tell me about my child's achievements and successes.		0.90			0.18	
	3a	How often? a.received information about what your child is studying in school?		0.85		0.31	0.19	
	3b	How often? b.received information on services for your child or for you, such as: tutoring, after school,etc		0.72		0.47	0.24	
	5b	Agree/disagree: b.The school clearly communicates its expectations for my child's learning .		0.92			0.11	
	5c	Agree/disagree: c.My child's teacher(s) give helpful comments on homework, class work, etc		0.87			0.20	
	13c	Satisfaction with: c.How well your child's school communicates with you.		0.94			0.10	
	Engagement	2a	Agree/disagree: a.I feel welcome in my child's school.		0.89			0.16
2b		Agree/disagree: b.I am satisfied with the response I get when I contact my child's school w/ questions.		0.92			0.10	
2c		Agree/disagree: c.My child's school makes it easy for parents to attend meeting.		0.88			0.21	
3c		How often? c.been invited to a workshop, program, performance, or other event at your child's school.		0.72		0.47	0.24	
6		My child participates in the following courses during the regular day.		0.27			0.91	
7		My child participates in the following courses before or after school.		0.34			0.79	
8		Agree/disagree: My child's school offers a wide enough variety of courses.		0.81			0.32	
13d		Satisfaction with: d.Your opportunities to be involved in your child's education.		0.90			0.11	
Safety and Respect		2g	Agree/disagree: g.There is an adult at the school whom my child trusts and can go to for help.		0.84			0.24
		9a	Agree/disagree: a.My child is safe at school.		0.88	0.30		0.10
	9b	Agree/disagree: b.My child's school is clean.		0.82			0.28	
	9c	Agree/disagree: c.Discipline is enforced fairly at my child's school.		0.90		-0.27	0.10	
	10	Agree/disagree: the presence of school safety agents help.		0.74			0.38	
	11a	Often think: a.Students threaten/bully other students. (reverse scored)		0.76	0.33	-0.26	0.25	
	11b	Often think: b.School staff are disrespectful to students. (reverse scored)		0.81			0.27	
	11c	Often think: c.There is racial/cultural bias by school staff. (reverse scored)		0.73			0.41	
	11d	Often think: d.There is conflict at my child's school based on race, culture, religion, etc. (reverse scored)		0.75	0.41		0.26	
	11e	Often think: e.Students use alcohol/illegal drugs during school. (reverse scored)		0.60	0.44		0.41	
	11f	Often think: f.There is gang activity in my child's school. (reverse scored)		0.68	0.56		0.22	

Note: The number of factors considered was taken as those with Eigenvalues greater than 1.

Table 5b: Factor analysis--Parents in High Schools, 2008 survey

				Factor loadings for survey items greater than 0.25 and less than -0.25			
Construct	Item	Question	Eigenvalues:	Factor 1 22.27	Factor 2 1.58	Factor 3 1.14	Uniqueness
Academic	5a	Agree/disagree: a.School has high expectations for my child.		0.89			0.17
Expectations	5d	Agree/disagree: d.My child is learning what he/she needs to know.		0.87		0.28	0.15
	5e	Agree/disagree: e. this year, staff helped my child to select courses that he or she needs to graduate		0.81		0.26	0.26
	13a	Satisfaction with: a.The quality of your child's teacher(s) this year.		0.87			0.22
Communication	13b	Satisfaction with: b.The level of assistance your child receives when he/she needs extra help w/ classwork.		0.90			0.19
	13e	Satisfaction with: e.The education your child has received this year.		0.91		0.26	0.10
	2d	Agree/disagree: d.The school keeps me informed about my child's academic progress.		0.92			0.14
	2e	Agree/disagree: e.The school contacts me when my child breaks rules.		0.85			0.26
	2f	Agree/disagree: f.The school contacts me to tell me about my child's achievements and successes.		0.87	-0.30		0.15
	3a	How often? a.received information about what your child is studying in school?		0.80	-0.34		0.21
	3b	How often? b.received information on services for your child or for you, such as: tutoring, after school,etc		0.77	-0.31		0.31
	5b	Agree/disagree: b.The school clearly communicates its expectations for my child's learning .		0.94			0.11
	5c	Agree/disagree: c.My child's teacher(s) give helpful comments on homework, class work, etc		0.89			0.18
	13c	Satisfaction with: c.How well your child's school communicates with you.		0.93			0.08
Engagement	2a	Agree/disagree: a.I feel welcome in my child's school.		0.91			0.17
	2b	Agree/disagree: b.I am satisfied with the response I get when I contact my child's school w/ questions.		0.94			0.11
	2c	Agree/disagree: c.My child's school makes it easy for parents to attend meeting.		0.88			0.19
	3c	How often? c.been invited to a workshop, program, performance, or other event at your child's school.		0.71			0.45
	6	My child participates in the following courses during the regular day.			0.43	0.37	0.64
	7	My child participates in the following courses before or after school.		0.58			0.61
	8	Agree/disagree: My child's school offers a wide enough variety of courses.		0.67		0.49	0.30
	13d	Satisfaction with: d.Your opportunities to be involved in your child's education.		0.90			0.14
Safety and Respect	2g	Agree/disagree: g.There is an adult at the school whom my child trusts and can go to for help.		0.88			0.22
	9a	Agree/disagree: a.My child is safe at school.		0.87	0.33		0.13
	9b	Agree/disagree: b.My child's school is clean.		0.80			0.31
	9c	Agree/disagree: c.Discipline is enforced fairly at my child's school.		0.88			0.17
	10	Agree/disagree: the presence of school safety agents help.		0.74			0.42
	11a	Often think: a.Students threaten/bully other students. (reverse scored)		0.80	0.33		0.25
	11b	Often think: b.School staff are disrespectful to students. (reverse scored)		0.81			0.27
	11c	Often think: c.There is racial/cultural bias by school staff. (reverse scored)		0.76	0.26	-0.32	0.26
	11d	Often think: d.There is conflict at my child's school based on race, culture, religion, etc. (reverse scored)		0.74	0.38	-0.31	0.22
	11e	Often think: e.Students use alcohol/illegal drugs during school. (reverse scored)		0.70		-0.38	0.35
	11f	Often think: f.There is gang activity in my child's school. (reverse scored)		0.73	0.44		0.24

Note: The number of factors considered was taken as those with Eigenvalues greater than 1.

Table 5c: Factor analysis--Middle School Students, 2008 survey

			Factor loadings for survey items greater than 0.25 and less than -0.25						
Construct	Item	Question	Eigenvalues:	Factor 1	Factor 2	Factor 3	Factor 4	Uniqueness	
				27.72	3.24	1.70	1.14		
Academic	3a	Agree/disagree: a.The adults at my school help me understand what I need to do to succeed in school.		0.85	0.36			0.14	
Expectations	3b	Agree/disagree: b.My teachers encourage me to succeed.		0.86	0.36			0.13	
	3c	Agree/disagree: c.I need to work hard to get good grades at my school.		0.50	0.51			0.44	
	3d	Agree/disagree: d.Students who get good grades in my school are respected by other students.		0.85	-0.27			0.19	
	3e	Agree/disagree: e.My school helps me to develop challenging academic goals.		0.89	0.26			0.12	
	3f	Agree/disagree: f.Someone at my school helps me understand what courses I need		0.63	0.56			0.28	
	3g	Agree/disagree: g.My teachers expect me to continue my education after high school.		0.82	0.28			0.23	
		7a	How often been asked to: a.Complete an essay using multiple sources of information		0.46		0.59		0.39
	7b	How often been asked to: b.Complete an essay where you had to use evidence to defend your own opinion		0.57		0.56		0.29	
Communication	2b	Agree/disagree: b.Most of the teachers, leaders,etc, I see at school every day know my name or who I am		0.60			0.28	0.55	
	4a	How comfortable are you talking to teachers and other adults: a problem you are having in class		0.80				0.28	
	4b	How comfortable are you talking to teachers and other adults: b. something that is bothering you		0.73	0.36			0.30	
	8b	In how many classes in the past 2 weeks have you: b.worked in groups of 2 to 6 students		0.59		0.34		0.50	
	8c	In how many classes in the past 2 weeks have you: c.had whole-class discussion		0.72		0.41		0.30	
	8d	In how many classes in the past 2 weeks have you: d.participated in hands-on activities		0.57				0.56	
	Engagement	2a	Agree/disagree: a.I feel welcome in my school.		0.92				0.13
		2c	Agree/disagree: c.The adults at my school look out for me.		0.92				0.12
5a		How available are teachers and other adults at your to talk about: a.a problem you are having		0.89				0.19	
5b		How available are teachers and other adults at your to talk about: b.something that is bothering you		0.90				0.16	
6d		Agree/disagree: d.My teachers enjoy the subjects they teach.		0.85				0.27	
6e		Agree/disagree: e.My teachers inspire me to learn.		0.74	0.55			0.13	
6f		Agree/disagree: f.My teachers give me extra help when I need it		0.86				0.21	
6g		Agree/disagree: g.My teachers connect what I am learning to life outside of the classroom.		0.85	0.25			0.19	
9		During the year have you taken/had a chance to take a class in the following subjects		0.39		0.34		0.68	
10		During the year which activities did you participate in before/after school		0.39	0.32		0.43	0.55	
11		Agree/disagree: My school offers a wide enough variety of classes and activities		0.70		-0.26		0.42	
Safety and Respect	6a	Agree/disagree: a.Teachers in my school treat students with respect		0.87		-0.25		0.13	
	6b	Agree/disagree: b.Most students in my school treat teachers with respect		0.87	-0.27			0.12	
	6c	Agree/disagree: c.Adults in my school treat each other with respect		0.84				0.29	
	12a	Agree/disagree: a.Most students in my school help and care about each other.		0.88	-0.30			0.13	
	12b	Agree/disagree: b.Most students in my school just look out for themselves.		-0.65	0.35			0.43	
	12c	Agree/disagree: c.Most students in my treat each other with respect.		0.89	-0.32			0.09	
	13a	How often: a.I stay home because I don't feel safe at school.(reverse scored)		0.74				0.31	
	13b	How often: b.Students threaten/bully other students at school. (reverse scored)		0.80	-0.46			0.13	
	13c	How often: c.Students get into physical fights at my school.(reverse scored)		0.80	-0.50			0.11	
	13d	How often: d.Adults at my school yell at students. (reverse scored)		0.75	-0.28			0.28	
	13e	How often: e.There is conflict in my school based on race, culture, etc.(reverse scored)		0.81				0.26	
	13f	How often: f.Students use alcohol/illegal drugs while at school. (reverse scored)		0.71			0.31	0.38	
	13g	How often: g.There is gang activity in my school. (reverse scored)		0.77	-0.36		0.25	0.20	
	14a	Agree/disagree: a.There is a person or program in my school that helps students resolve conflicts.		0.75				0.41	
	14b	Agree/disagree: b.Discipline in my school is fair.		0.86				0.19	
14c	Agree/disagree: c.I am safe in my classes.		0.94				0.09		
14d	Agree/disagree: d.I am safe in the hallways, bathrooms, and locker rooms		0.91				0.09		
14e	Agree/disagree: e.I am safe on school property outside my building.		0.86				0.19		
14f	Agree/disagree: f.My school is kept clean.		0.81				0.24		
	14g	Agree/disagree: g. the school safety agents help to promote a safe and respectful learning environment.		0.76				0.38	

Note: The number of factors considered was taken as those with Eigenvalues greater than 1.

Table 5d: Factor analysis--High School Students, 2008 survey

Construct	Item	Question	Eigenvalues:	Factor loadings for survey items greater than 0.25 and less than -0.25					Uniqueness
				Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	
Academic Expectations	3a	Agree/disagree: a.The adults at my school help me understand what I need to do to succeed in school.	28.49	0.86	0.30				0.08
	3b	Agree/disagree: b.My teachers encourage me to succeed.	3.30	0.88					0.09
	3c	Agree/disagree: c.I need to work hard to get good grades at my school.	2.25	0.55		0.44			0.47
	3d	Agree/disagree: d.Students who get good grades in my school are respected by other students.	1.48	0.89					0.15
	3e	Agree/disagree: e.My school helps me to develop challenging academic goals.	1.21	0.91					0.09
	3f	Agree/disagree: f.Someone at my school helps me understand what courses I need		0.60	0.40		0.33		0.36
	3g	Agree/disagree: g.My teachers expect me to continue my education after high school.		0.87					0.18
	3h	Agree/disagree: i. My school provides helpful counseling on how to get a good job or get into college		0.69	0.32				0.25
	7a	How often been asked to: a.Complete an essay using multiple sources of information		0.47	-0.65				0.34
Communication	7b	How often been asked to: b.Complete an essay where you had to use evidence to defend your opinion		0.64	-0.55			-0.27	0.18
	2b	Agree/disagree: b.Most of the teachers, leaders,etc, I see every day know my name or who I am		0.59		-0.67			0.17
	4a	How comfortable are you talking to teachers and other adults: a problem you are having in class		0.84					0.28
	4b	How comfortable are you talking to teachers and other adults: b. something that is bothering you		0.70	0.46				0.25
	8b	In how many classes in the past 2 weeks have you: b.worked in groups of 2 to 6 students		0.67				-0.32	0.38
	8c	In how many classes in the past 2 weeks have you: c.had whole-class discussion		0.59	-0.43			-0.29	0.35
	8d	In how many classes in the past 2 weeks have you: d.participated in hands-on activities		0.58				-0.30	0.52
	2a	Agree/disagree: a.I feel welcome in my school.		0.94					0.10
Engagement	2c	Agree/disagree: c.The adults at my school look out for me.		0.88		-0.32			0.10
	5a	How available are teachers and other adults at your to talk about: a.a problem you are having		0.89					0.18
	5b	How available are teachers and other adults at your to talk about: b.something that is bothering you		0.89					0.18
	6d	Agree/disagree: d.My teachers enjoy the subjects they teach.		0.91					0.13
	6e	Agree/disagree: e.My teachers inspire me to learn.		0.79	0.48				0.12
	6f	Agree/disagree: f.My teachers give me extra help when I need it		0.88					0.15
	6g	Agree/disagree: g.My teachers connect what I am learning to life outside of the classroom.		0.86					0.23
	9	During the year have you taken/had a chance to take a class in the following subjects			-0.25	0.41	0.47		0.50
	10	During the year which activities did you participate in before/after school		0.60			0.42		0.43
	11	Agree/disagree: My school offers a wide enough variety of classes and activities		0.52	0.34	0.66			0.15
Safety and Respect	6a	Agree/disagree: a.Teachers in my school treat students with respect		0.88			-0.26		0.09
	6b	Agree/disagree: b.Most students in my school treat teachers with respect		0.90					0.09
	6c	Agree/disagree: c.Adults in my school treat each other with respect		0.88					0.18
	12a	Agree/disagree: a.Most students in my school help and care about each other.		0.93					0.08
	12b	Agree/disagree: b.Most students in my school just look out for themselves.		-0.74					0.31
	12c	Agree/disagree: c.Most students in my treat each other with respect.		0.92					0.07
	13a	How often: a.I stay home because I don't feel safe at school. (reverse scored)		0.62	-0.47			0.26	0.28
	13b	How often: b.Students threaten/bully other students at school. (reverse scored)		0.89	-0.27				0.08
	13c	How often: c.Students get into physical fights at my school.(reverse scored)		0.85	-0.38				0.09
	13d	How often: d.Adults at my school yell at students. (reverse scored)		0.85			-0.30		0.17
	13e	How often: e.There is conflict in my school based on race, culture, etc (reverse scored)		0.76				0.25	0.30
	13f	How often: f.Students use alcohol/illegal drugs while at school. (reverse scored)		0.61		-0.34		0.27	0.42
	13g	How often: g.There is gang activity in my school. (reverse scored)		0.79	-0.39				0.17
	14a	Agree/disagree: a.There is a person or program in my school that helps students resolve conflicts.		0.59		0.42			0.42
	14b	Agree/disagree: b.Discipline in my school is fair.		0.83	0.26	0.28			0.15
14c	Agree/disagree: c.I am safe in my classes.		0.94					0.06	
14d	Agree/disagree: d.I am safe in the hallways, bathrooms, and locker rooms		0.90	-0.27				0.07	
14e	Agree/disagree: e.I am safe on school property outside my building.		0.79					0.21	
14f	Agree/disagree: f.My school is kept clean.		0.83					0.27	
14g	Agree/disagree: g. the school safety agents help to promote a safe and respectful learning environment.		0.68				0.29	0.37	

Note: The number of factors considered was taken as those with Eigenvalues greater than 1.

Table 5e: Factor analysis--Teachers in Elementary/Middle Schools, 2008 survey

Construct	Item	Question	Eigenvalues:	Factor loadings for survey items greater than 0.25 and less than -0.25				Uniqueness	
				Factor 1 30.95	Factor 2 3.53	Factor 3 2.14	Factor 4 1.89		
Academic Expectations	1d	Agree/disagree: d.Curriculum, instruction, and assessment are aligned within and across the grade levels		0.86				0.20	
	1e	Agree/disagree: e.The principal places the learning needs of children ahead of other interests.		0.85	-0.34			0.12	
	2a	Agree/disagree: a.My school has high expectations for all students.		0.89				0.17	
	2b	Agree/disagree: b.Teachers in this school set high standards for student work		0.78	0.32			0.22	
	2c	Agree/disagree: c.My school has clear measures of progress for student achievement		0.89				0.15	
	2d	Agree/disagree: d.This school makes it a priority to help students develop challenging learning goals		0.94				0.11	
	2e	Agree/disagree: e.This school makes it a priority to help students find the best ways to achieve their learning goals		0.94				0.11	
	3_1	Which of the following courses/activities available to students? 1.Offered as a regular course						0.95	
	3_2	Which of the following courses/activities available to students? 2.Offered before/after school						0.91	
	6a	Agree/disagree: a.The principal has confidence in the expertise of the teachers		0.82	-0.32			0.21	
	6g	Agree/disagree: g.School leaders visit classrooms to observe the quality of teaching		0.78				0.34	
	6i	Agree/disagree: i.School leaders place a high priority on the quality of teaching		0.93				0.12	
	6j	Agree/disagree: j.Most teachers in my school work together to improve their instructional practice		0.81		0.37		0.18	
	6k	Agree/disagree: k.Teachers in this school use student achievement data to improve instructional practice		0.82			0.33	0.21	
Communication	7d	Agree/disagree: d.I have sufficient materials to teach my class		0.78				0.39	
	7e	Agree/disagree: e.My instructional materials are in good condition		0.80				0.34	
	1a	Agree/disagree: a.School leaders communicate a clear vision for this school		0.89				0.13	
	1b	Agree/disagree: b.School leaders let staff know what is expected of them		0.88				0.13	
	1c	Agree/disagree: c.School leaders encourage open communication on important issues		0.86	-0.34			0.13	
	1f	Agree/disagree: f.The principal is an effective manager who makes the school run smoothly		0.87	-0.29			0.11	
	1g	Agree/disagree: g.I trust the principal at his/her word.		0.82	-0.39			0.12	
	6h	Agree/disagree: h.School leaders give me regular and helpful feedback about my teaching		0.86				0.16	
	8c	Agree/disagree: c.My communicates effectively with parents when students misbehave		0.85				0.21	
	11b	How often? b.communicated with parents about their children's progress in class					0.33	0.81	
	11c	How often? c.sent parents written information on what you are teaching and what students are expected to learn		0.38	0.26		0.58	0.44	
	11d	How often? d.sent home information on services to help students or parents such as: tutoring, etc		0.35			0.55	0.54	
	Engagement	4	Agree/disagree: My offers a wide enough variety of activities		0.77				0.40
		5a	To what extent do you feel supported by: a.your principal?		0.85	-0.37			0.09
5b		To what extent do you feel supported by: b.other teachers at your school?		0.65		0.58		0.24	
6b		Agree/disagree: b.School leaders invite teachers to play a meaningful role in setting goals and making important decisions		0.85	-0.36			0.15	
6c		Agree/disagree: c.School leaders encourage collaboration among teachers		0.84				0.22	
7a		Agree/disagree: a.This year, I received helpful training on the use of student achievement data to improve teaching and learning		0.77				0.29	
7b		Agree/disagree: b.The prof. dev. I received this year provided me with content support in my subject area		0.79				0.31	
7c		Agree/disagree: c.The prof. dev. I received this year provided me with teaching strategies to better meet the needs of my students		0.82				0.27	
8a		Agree/disagree: a.Obtaining information from parents about student needs is a priority at my school		0.91				0.18	
8b		Agree/disagree: b.Tch and admin use information from parents to improve instructional practices and meet student learning needs		0.91				0.17	
6d		Agree/disagree: d.Teachers respect teachers who take the lead in school improvement efforts		0.73		0.57		0.11	
6e		Agree/disagree: e.Teachers in this trust each other.		0.70		0.61		0.13	
6f		Agree/disagree: f.Teachers in this school recognize and respect colleagues who are the most effective		0.68		0.63		0.13	
Safety and Respect		12a	Agree/disagree: a.Order and discipline are maintained at my school		0.87				0.13
	12b	Agree/disagree: b.I can get the help I need to address student behavior and discipline problems		0.88			-0.26	0.14	
	12c	Agree/disagree: c.I am safe at my school.		0.84	0.25		-0.30	0.13	
	12d	Agree/disagree: d.Crime and violence are a problem in my school. (reverse scored)		0.75	0.50			0.12	
	12e	Agree/disagree: e.Students in my school are often threatened/bullied. (reverse scored)		0.76	0.47			0.14	
	12f	Agree/disagree: f.Adults at my school are often disrespectful to students. (reverse scored)		0.68	0.35			0.37	
	12g	Agree/disagree: g.Most students at my school treat teachers with respect.		0.80	0.41			0.14	
	12h	Agree/disagree: h.Most parents treat teachers at this school with respect.		0.71			-0.29	0.33	
	12i	Agree/disagree: i.Students' use of alcohol and illegal drugs in school is a problem at my school. (reverse scored)		0.55	0.57			0.35	
	12j	Agree/disagree: j.There are conflicts at my school based on race, culture, etc. (reverse scored)		0.63	0.47			0.33	
	12k	Agree/disagree: k.There is a person or a program in my school that helps student resolve conflicts.		0.62				0.58	
	12l	Agree/disagree: l.Gang activity is a problem in my school. (reverse scored)		0.60	0.61			0.26	
	12m	Agree/disagree: m.My school is kept clean.		0.54				0.69	
	12n	Agree/disagree: n. the School Safety Agency help promote a safe and respectful learning environment.		0.58	0.29			0.55	

Note: The number of factors considered was taken as those with Eigenvalues greater than 1.

Table 5f: Factor analysis--Teachers in High Schools, 2008 survey

		Factor loadings for survey items greater than 0.25 and less than -0.25						
Construct	Item Question	Factor 1 27.63	Factor 2 3.74	Factor 3 2.90	Factor 4 2.04	Factor 5 1.34	Uniqueness	
Academic	1d Agree/disagree: d.Curriculum, instruction, and assessment are aligned within and across the grade levels	0.82					0.25	
	1e Agree/disagree: e.The principal places the learning needs of children ahead of other interests.	0.87					0.12	
	2a Agree/disagree: a.My school has high expectations for all students.	0.86					0.20	
	2b Agree/disagree: b.Teachers in this school set high standards for student work	0.71	0.27		0.26	-0.29	0.27	
	2c Agree/disagree: c.My school has clear measures of progress for student achievement	0.86					0.18	
	2d Agree/disagree: d.This school makes it a priority to help students develop challenging learning goals	0.91					0.13	
	2e Agree/disagree: e.This school makes it a priority to help students find the best ways to achieve their learning goals	0.92					0.14	
	2f Agree/disagree: f.This school makes it a priority to help students select the best courses to achieve their career goals.	0.83					0.26	
	3_1 Which of the following courses/activities available to students? 1.Offered as a regular course					-0.37	0.79	
	3_2 Which of the following courses/activities available to students? 2.Offered before/after school					0.33	0.80	
	6a Agree/disagree: a.The principal has confidence in the expertise of the teachers	0.81			-0.30		0.22	
	6g Agree/disagree: g.School leaders visit classrooms to observe the quality of teaching	0.70					0.40	
	6i Agree/disagree: i.School leaders place a high priority on the quality of teaching	0.91					0.14	
	6j Agree/disagree: j.Most teachers in my school work together to improve their instructional practice	0.74		-0.44			0.20	
	6k Agree/disagree: k.Teachers in this school use student achievement data to improve instructional practice	0.78			0.27		0.24	
	7d Agree/disagree: d.I have sufficient materials to teach my class	0.70					0.50	
	7e Agree/disagree: e.My instructional materials are in good condition	0.72					0.42	
Communication	1a Agree/disagree: a.School leaders communicate a clear vision for this school	0.89					0.14	
	1b Agree/disagree: b.School leaders let staff know what is expected of them	0.85	-0.26				0.15	
	1c Agree/disagree: c.School leaders encourage open communication on important issues	0.84	-0.25		-0.26		0.11	
	1f Agree/disagree: f.The principal is an effective manager who makes the school run smoothly	0.85			-0.28		0.10	
	1g Agree/disagree: g.I trust the principal at his/her word.	0.84			-0.33		0.10	
	6h Agree/disagree: h.School leaders give me regular and helpful feedback about my teaching	0.82	-0.27				0.21	
	8c Agree/disagree: c.My communicates effectively with parents when students misbehave	0.84					0.28	
	11b How often? b.communicated with parents about their children's progress in class		-0.40		0.49		0.53	
	11c How often? c.sent parents written information on what you are teaching and what students are expected to learn		-0.32	0.34	0.59	0.26	0.33	
	11d How often? d.sent home information on services to help students or parents such as: tutoring, etc	0.36	-0.29	0.27	0.44		0.46	
	Engagement	4 Agree/disagree: My offers a wide enough variety of activities	0.69		0.27		-0.29	0.36
5a To what extent do you feel supported by: a.your principal?		0.86			-0.34		0.08	
5b To what extent do you feel supported by: b.other teachers at your school?		0.54		-0.58			0.35	
6b Agree/disagree: b.School leaders invite teachers to play a meaningful role in setting goals and making important decisions		0.82		-0.26			0.11	
6c Agree/disagree: c.School leaders encourage collaboration among teachers		0.79		-0.38			0.14	
7a Agree/disagree: a.This year, I received helpful training on the use of student achievement data to improve teaching and learning		0.72	-0.27				0.35	
7b Agree/disagree: b.The prof. dev. I received this year provided me with content support in my subject area		0.76	-0.30				0.32	
7c Agree/disagree: c.The prof. dev. I received this year provided me with teaching strategies to better meet the needs of my students		0.79					0.31	
8a Agree/disagree: a.Obtaining information from parents about student needs is a priority at my school		0.83					0.26	
8b Agree/disagree: b.Tch and admin use information from parents to improve instructional practices and meet student learning needs		0.85					0.25	
Safety and Respect		6d Agree/disagree: d.Teachers respect teachers who take the lead in school improvement efforts	0.72		-0.55			0.16
		6e Agree/disagree: e.Teachers in this trust each other.	0.64		-0.60			0.19
		6f Agree/disagree: f.Teachers in this school recognize and respect colleagues who are the most effective teachers.	0.68		-0.56			0.16
	12a Agree/disagree: a.Order and discipline are maintained at my school	0.78	0.34	0.29			0.18	
	12b Agree/disagree: b.I can get the help I need to address student behavior and discipline problems	0.84					0.18	
	12c Agree/disagree: c.I am safe at my school.	0.78	0.41				0.21	
	12d Agree/disagree: d.Crime and violence are a problem in my school (reverse scored)	0.63	0.62				0.18	
	12e Agree/disagree: e.Students in my school are often threatened/bullied. (reverse scored)	0.62	0.59				0.21	
	12f Agree/disagree: f.Adults at my school are often disrespectful to students.(reverse scored)	0.60	0.36	-0.29			0.43	
	12g Agree/disagree: g.Most students at my school treat teachers with respect.	0.69	0.47				0.27	
	12h Agree/disagree: h.Most parents treat teachers at this school with respect.	0.54	0.35				0.57	
	12i Agree/disagree: i.Students' use of alcohol and illegal drugs in school is a problem at my school. (reverse scored)	0.55	0.42				0.49	
	12j Agree/disagree: j.There are conflicts at my school based on race, culture, etc (reverse scored)	0.44	0.38				0.53	
	12k Agree/disagree: k.There is a person or a program in my school that helps student resolve conflicts.	0.55					0.66	
12l Agree/disagree: l.Gang activity is a problem in my school. (reverse scored)	0.50	0.62				0.33		
12m Agree/disagree: m.My school is kept clean.	0.50					0.69		
12n Agree/disagree: n. the School Safety Agency help promote a safe and respectful learning environment.	0.31		0.41			0.66		

Note: The number of factors considered was taken as those with Eigenvalues greater than 1.

Table 6: Correlations between survey total scores in each dimension with other measures of school environment and school quality for the year 2007

			Academic Expectations	Communication	Engagement	Safety
Elementary/Middle Schools (N=983)	Total Score	Progress Report Score (w/o survey score)	0.20	0.13	0.18	0.19
		Quality Review	0.46	0.25	0.34	0.45
		NCLB Status	0.32	0.30	0.26	0.42
		Suspensions per student at school	N/A	N/A	N/A	-0.53
	Parent Score	Progress Report Score (w/o survey score)	0.16	0.16	0.06	0.18
		Quality Review	0.30	0.27	0.09	0.39
		NCLB Status	0.31	0.32	0.24	0.45
		Suspensions per student at school	N/A	N/A	N/A	-0.54
	Teacher Score	Progress Report Score (w/o survey score)	0.19	0.13	0.15	0.23
		Quality Review	0.46	0.38	0.37	0.45
		NCLB Status	0.27	0.22	0.23	0.36
		Suspensions per student at school	N/A	N/A	N/A	-0.40
	Student score	Progress Report Score (w/o survey score)	0.19	0.21	0.26	0.32
		Quality Review	0.13	0.07	0.23	0.29
		NCLB Status	0.16	0.23	0.27	0.38
		Suspensions per student at school	N/A	N/A	N/A	-0.43
High Schools (N=235)	Total Score	Progress Report Score (w/o survey score)	0.58	0.43	0.48	0.56
		Quality Review	0.45	0.36	0.37	0.40
		NCLB Status	0.32	0.28	0.24	0.40
		Suspensions per student at school	N/A	N/A	N/A	-0.33
	Parent Score	Progress Report Score (w/o survey score)	0.55	0.37	0.32	0.49
		Quality Review	0.38	0.25	0.10	0.31
		NCLB Status	0.38	0.31	0.28	0.47
		Suspensions per student at school	N/A	N/A	N/A	-0.22
	Teacher Score	Progress Report Score (w/o survey score)	0.48	0.34	0.37	0.54
		Quality Review	0.46	0.41	0.40	0.47
		NCLB Status	0.17	0.07	0.09	0.26
		Suspensions per student at school	N/A	N/A	N/A	-0.37
	Student score	Progress Report Score (w/o survey score)	0.45	0.30	0.49	0.49
		Quality Review	0.28	0.14	0.29	0.27
		NCLB Status	0.36	0.33	0.32	0.37
		Suspensions per student at school	N/A	N/A	N/A	-0.31

Note: Elementary/Middle and High Schools are those that appear in the corresponding school report data; Progress Report Score is the overall score not including any additional credits minus the survey score; Quality Review was coded as 1 "Undeveloped" 2 "Proficient" 3 "Well-Developed"; NCLB Status was coded as 0 "Restructuring" 1 "Needs Improvement" 2 "In Good Standing".