One of the school board goals for this year is to improve school climate. We contracted with the Center of Applied Research and Educational Improvement (CAREI), a department within the University of Minnesota, for consultation with this initiative. CAREI is recommending The New Jersey Climate Survey, which is attached along with a fact sheet describing the research base. The school board requested to review the survey instrument before it is administered.

School Climate Survey

School Staff

We want to know what YOU think about your school.

The information from the survey will help us improve student relationships, learning conditions, and the school's overall environment.

YOUR answers are confidential.

Your answers will be combined with those of other school staff.

No one will be told how you answered.

This survey is voluntary.

You do NOT have to answer any question if you do not want to, but we hope you will answer as many questions as you can.

INSTRUCTIONS

Please read each question carefully, and circle the number under the <u>one</u> answer that most closely fits your opinion. We appreciate your taking the time to do the survey.

BEGIN YOUR SURVEY BELOW ↓

1. **Please indicate how much you agree or disagree with the following statements about YOUR SCHOOL:**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. The school's schedule allows adequate time for teacher collaboration.	1	2	3	4	5
b. The school's schedule allows adequate time for teacher preparation and planning.	1	2	3	4	5
c. Students at this school learn ways to manage time.	1	2	3	4	5
d. The school environment is clean and in good condition.	1	2	3	4	5
e. I take pride in the appearance of the school.	1	2	3	4	5
f. I feel safe outside on the school grounds.	1	2	3	4	5
g. I feel safe in the hallways and bathrooms.	1	2	3	4	5
h. I feel safe in the classrooms.	1	2	3	4	5
i. Students are safe at this school.	1	2	3	4	5
j. In this school, we teach ways to resolve disagreements so that everyone can be satisfied with the outcomes.	1	2	3	4	5
k. Students at this school are well-behaved.	1	2	3	4	5

2. Please indicate how much you agree or disagree with the following statements about YOUR SCHOOL:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. Students at this school don't care about learning.	1	2	3	4	5
b. I spend a great deal of time dealing with students' social and emotional challenges.	1	2	3	4	5
c. The school community has high expectations of all students.	1	2	3	4	5
d. Students have pride in the school.	1	2	3	4	5
e. My class enrollments are too large.	1	2	3	4	5
f. Students at this school get the chance to work independently.	1	2	3	4	5
g. School administrators give me useful feedback on my teaching.	1	2	3	4	5
h. Some students at this school just cannot be motivated to do the work.	1	2	3	4	5
i. Students at this school are encouraged to think critically.	1	2	3	4	5
j. I have access to the tools I need to do my job.	1	2	3	4	5
k. I am dissatisfied with opportunities for my professional growth.	1	2	3	4	5
l. I look forward to coming to work every day.	1	2	3	4	5
m. I spend too much of my teaching time on disciplining students.	1	2	3	4	5
n. The best teachers and staff are retained at this school.	1	2	3	4	5

3. **Please indicate how much you agree or disagree with the following statements about YOUR SCHOOL:**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. Teachers have close working relationships with each other.	1	2	3	4	5
b. Teachers talk with students about ways to understand and control emotions.	1	2	3	4	5
c. At this school, teachers are treated and respected as educational professionals.	1	2	3	4	5
d. At this school, it is common for students to tease and insult one another.	1	2	3	4	5
e. Parents respect their children's teachers.	1	2	3	4	5
f. I do not have enough autonomy over my classroom.	1	2	3	4	5
g. Adults who work in this school treat students with respect.	1	2	3	4	5
h. Adults who work in this school typically work well with one another.	1	2	3	4	5
i. Many students at this school go out of their way to treat other students badly.	1	2	3	4	5
j. Teachers at this school build strong relationships with students.	1	2	3	4	5
k. The code of student conduct is fair.	1	2	3	4	5
l. The school consistently enforces the code of student conduct.	1	2	3	4	5
m. Parents are actively involved with the school.	1	2	3	4	5
n. Students respect their teachers.	1	2	3	4	5
o. Parents are made to feel welcome in this school.	1	2	3	4	5
p. Parents know what is going on in this school.	1	2	3	4	5
q. Parents are aware of what is expected of their child at this school.	1	2	3	4	5
r. Parents care about how their child performs in school.	1	2	3	4	5

4. Please indicate how much you agree or disagree with the following statements about YOUR SCHOOL:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. Students in this school respect each other's differences (for example, gender, race, culture, etc.).	1	2	3	4	5
b. I am proud to tell others that I work at this school.	1	2	3	4	5
c. School administrators recognize teachers for a job well-done.	1	2	3	4	5
d. The school staff respects and embraces diversity.	1	2	3	4	5
e. School administrators communicate effectively with others from diverse backgrounds.	1	2	3	4	5
f. This school encourages students to get involved in extracurricular activities.	1	2	3	4	5
g. School administrators follow through on commitments.	1	2	3	4	5
h. School administrators involve teachers in decision making and problem solving.	1	2	3	4	5
i. School administrators and staff communicate with each other effectively.	1	2	3	4	5
j. School administrators promote the success of all students.	1	2	3	4	5
k. School administrators hold themselves to the same high expectations as others.	1	2	3	4	5
l. School administrators back me up when I need it.	1	2	3	4	5
m. School administrators are aware of what goes on in the classrooms.	1	2	3	4	5
n. This school is a good place for me to work and learn.	1	2	3	4	5

THIS IS THE END OF THE SURVEY. THANK YOU!

How is School Climate Measured?

School climate is a composite variable that cannot be observed directly (i.e., it is a "latent variable"). It is comprised of a set of domains, which are also latent. These domains are constructed from the interaction of a set of scores from survey questions ("items") that can be observed directly, meaning they can be asked-and-answered in a survey setting. Thus, to measure school climate, we need to build up from single-observable-items to domains, and then assess those domains as composite elements of school climate. To be sure, there is no benchmark for school climate; it is not an absolute measure in the sense that it can anchored to a known value, such as a person's age can be anchored to their birthdate. School climate is a relative variable that can only be compared to a prior measure of itself. Perceptions of school climate can differ based on the subject's role within the school environment. In this regard, elementary students, middle or high school students, parents and teachers/staff can all be queried as to their perceptions of school climate.

How Do We Validate School Climate?

An essential aspect of school climate analysis is the validation of the reported measure, meaning, does the aggregation of survey item responses "work" in the sense that they represent the domain they are intended to represent. In other words, the point of scale/data validation is to ask and answer the question: *Are we measuring what we think we're measuring?* To this end, once the survey questionnaire has been developed, it is not so much the questions that are of analytical interest, but the resulting data, i.e., the answers. If the data interact in a quantifiably logical way that aligns with the theory that drove the development of the questionnaires, the survey items (and, in turn, the questionnaire) are said to be validated. A "valid" questionnaire is one which, when fielded, returns data that actually measures what the researcher intended be measured.

Conceptual Domain Construction

The initial version of the New Jersey Department of Education's (NJDOE's) New Jersey School Climate Survey (NJSCS) was piloted in several districts during the 2012-13 school year. In developing the NJSCS, the item-to-domain scale assignments were theoretically informed by drawing on the experiences and outcomes of prior validated scales. We know, from experience and the literature, that certain domains of interest, when "added up," constitute the climate of school. These typically include such considerations as "teaching and learning," "student relationships," and "staff/administration relationships," as well the quality and maintenance of the school building itself.

The proof, however, that the researcher's conjecture is useful (even though based on theory and empirically prior validated scales) is in the data. A questionnaire validated for one situation may not be valid in another. To that end, it was critical that NJDOE deploy statistical tests to assess whether the collected data are consistent with the substantive theoretical motivations for selecting the survey items included in the school climate questionnaires.

Methodology

To conduct an assessment of the questionnaire content and domain construction in the initial NJSCS, the NJDOE retained survey statistics experts at the Bloustein Center for Survey Research (BCSR) at Rutgers University to verify the empirical propriety and efficacy of each domain scale item to determine whether (a) that item should be retained for that domain scale; (b) reassigned to another domain scale; or (c) could be omitted from the survey instrument with no loss of empirical purchase. In other words, we asked our survey statistics experts to analyze the data and tell us whether a survey question "worked" for the domain to which it was originally assigned, or, whether that item actually "worked" for a different domain, or, whether that item could omitted altogether under the principle that a short questionnaire is more efficient. This assessment informed improvements and revisions to the NJSCS which are included in materials to be used by NJDOE beginning in the 2014-15 school year.

BCSR conducted confirmatory factor analyses via structural equation modeling of each domain for each population to whom the school climate survey was administered, i.e., elementary school students and staff, middle school students and staff, high school students and staff, and parents from each school level. A total of 51,853 sets of survey responses were factor analyzed:

Elementary School students: 7,778 student respondents' data collected from 44 schools;
Middle School students: 15,189 student respondents' data collected from 80 schools;
High School students: 17,117 student respondents' data collected from 77 schools;
Parents of students: 4,757 parent respondents' data collected from 60 schools; and,
School Staff members: 7,012 staff member respondents' data collected from 97 schools.

To determine "what worked" our experts used a three-index strategy. When properly analyzed in context, these measures inform us as to how well the scores to the items assigned to a domain scale generate a latent variable that represents the domain. More specifically, the assessment of each domain scale's performance was predicated on three goodness-of-fit (GOF) measures:

- *explanatory validity*- the coefficient of determination (CD);
- *predictive validity*- the standardized root mean squared residual (SRMR); and
- *comparative model fit*- the Tucker-Lewis Index (TLI).

While the most desirable outcome is to have all three measures indicate a high GOF, for practical purposes, it was required that at least two GOF measures perform at commonly accepted standard statistical threshold levels. In terms of threshold levels the CD is the proportion of variation in the latent variable explained by the equation of a model and the higher it is, the better the fit, with 1.0 representing the "perfect model." The SRMR is a measure of error and so we seek the smallest value possible relative to the "perfect fit" of 0.00, which would indicate the absence of any error. An acceptable upper bound is generally considered to be less than or equal to 0.08. For the TLI, a value close to 1 indicates a good fit and so we generally seek values greater than 0.90.

Many similar surveys merely report the Cronbach's alpha measure of reliability. Reliability is defined as "freedom from measurement (or random) error [that] in practice…boils down to the *consistency* or stability of a measure or test or observation internally or from one use to the next. When repeated measurements of the same thing give highly similar results, the measurement instrument is said to be reliable."[1]

In assessing the validity of a new questionnaire, however, we do not seek to measure "the same thing" with each scale item; rather, we seek to measure a different aspect of "the same thing." Indeed, we seek items that measure different aspects of "the same thing" that covary in structurally logical ways. Thus, Cronbach's alpha is more useful in comparing the performance of scales across repeated administrations of the same survey, rather than assessing the initial efficacy of a newly-constructed scale, such as we have here.

We point out the diminished value of a Cronbach's measure on scale validity assessment because many researchers highlight high alpha values at the expense of other more sensitive, nuanced, and useful measures. Because it is scores, rather than questionnaires, that are validated, the Cronbach's alpha measure would be more useful for comparing the 2013 survey data to later years' survey data.

Discussion of Results

When the 2012-13 data were analyzed, our experts assessed the performance of this distribution of survey items, and were able—using the same data—to reconstruct the distribution of the items to the school climate domains to be more efficient and descriptive. The following table shows the revised domain distribution for the NJSCS. Subpopulations are organized by columns; domains are organized by rows, with the number of items per domain scale in parentheses.

Middle and High School Students	Elementary School Students	Staff	Parents
Physical Environment (4)	Physical Environment (2)	Physical Environment (4)	Physical Environment (3)
Teaching and Learning (11)	Teaching and Learning (8)	Teaching and Learning (10)	Teaching and Learning (11)
Morale in the School Community (9)	Morale in the School Community (6)	Morale in the School Community (5)	Morale in the School Community (4)
Student Relationships (4)	Student Relationships (5)	Relationships (9)	Relationships (11)
Parental Support (3)	Parental Support (2)	Parental Support and Engagement (5)	Parental Support and Engagement (9)
Safety (4)	Safety (3)	Safety (4)	Safety/Emotional Environment (3)
Emotional Environment (14)	Emotional Environment (10)	Emotional Environment (10)	
		Administration Support (10)	

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[1] W. Paul Vogt and R. Burke Johnson. (2011). <u>Dictionary of Statistics and Methodology</u>. (Sage Publications: Washington, D.C.), pg. 336 (italics in original).

The following table shows the GOF measures (i.e., how well the data fit the domain) for data analyzed on the basis of the revised questionnaires:

Confirmatory Factor Analysis (via Structural Equation Modeling)
Goodness-of-Fit Measures, Revised Domain by Subsample
Data Source: NJDOE School Climate Survey 2012-2013

Domain	HS			MS			ES			Staff			Parents		
	TLI	SRMR	CD	TLI	SRMR	CD	TLI	SRMR	CD	TLI	SRMR	CD	TLI	SRMR	CD
PHYSENV	0.99	0.01	0.69	0.94	0.02	0.82	*n/a*			0.88	0.05	0.85	1.00	0.00	0.84
TANDL	0.93	0.03	0.89	0.94	0.03	0.88	0.85	0.04	0.78	0.85	0.04	0.81	0.96	0.02	0.96
MORALE IN SC	0.74	0.06	0.84	0.76	0.06	0.84	0.91	0.03	0.74	0.92	0.04	0.88	0.98	0.02	0.84
STDTS RELATS	1.00	0.01	0.89	0.99	0.02	0.89	0.86	0.04	0.78	0.74	0.08	0.87	0.90	0.05	0.93
PARENTAL S&E	0.96	0.02	0.70	0.98	0.01	0.71	*n/a*			0.80	0.06	0.86	0.91	0.04	0.90
SAFETY	1.00	0.01	0.88	0.98	0.02	0.82	0.94	0.02	0.58	0.99	0.10	0.91	0.99	0.10	0.79
EMOTENV	0.69	0.07	0.87	0.73	0.06	0.87	0.78	0.05	0.74	0.79	0.06	0.85			
ADMIN SUPP										0.98	0.02	0.95			

While our analysis does not focus on Cronbach's alpha, in the interest of full disclosure, we report the following alpha values for the revised domains, noting that the two of the elementary school domains only contain two items and, as such, will not produce an alpha value:

Cronbach's Alpha and Number of Scale Items: Revised Domain by Subsample
Data Source: NJDOE School Climate Survey 2012-2013

Domain	HS		MS		ES		Staff		Parents	
	Alpha	Items	Alpha	Items	Alpha	Items	Alpha	Items	Alpha	Items
PHYSENV	0.46	4	0.44	4	*n/a*	2	0.72	4	0.73	3
TANDL	0.88	11	0.87	11	0.76	8	0.80	10	0.96	11
MORALE IN SC	0.80	9	0.82	9	0.68	6	0.78	5	0.73	4
STDTS RELATS	0.82	4	0.83	4	0.69	5	0.81	9	0.92	11
PARENTAL S&E	0.67	3	0.63	3	*n/a*	2	0.81	5	0.89	9
SAFETY	0.73	4	0.72	4	0.50	3	0.89	4	0.74	3
EMOTENV	0.84	14	0.86	14	0.68	10	0.79	10		
ADMIN SUPP							0.95	10		

The outcomes of the revised confirmatory factor analyses, shown in the tables immediately above, strongly support the reconfiguration of the existing survey items into the revised domains to be used in the 2014 NJSCS. In addition, we were able to streamline questionnaires by eliminating duplicative items, thereby reducing the burden on the survey respondents. The final NJSCS materials are available online at:
http://www.state.nj.us/education/students/safety/behavior/njscs/.