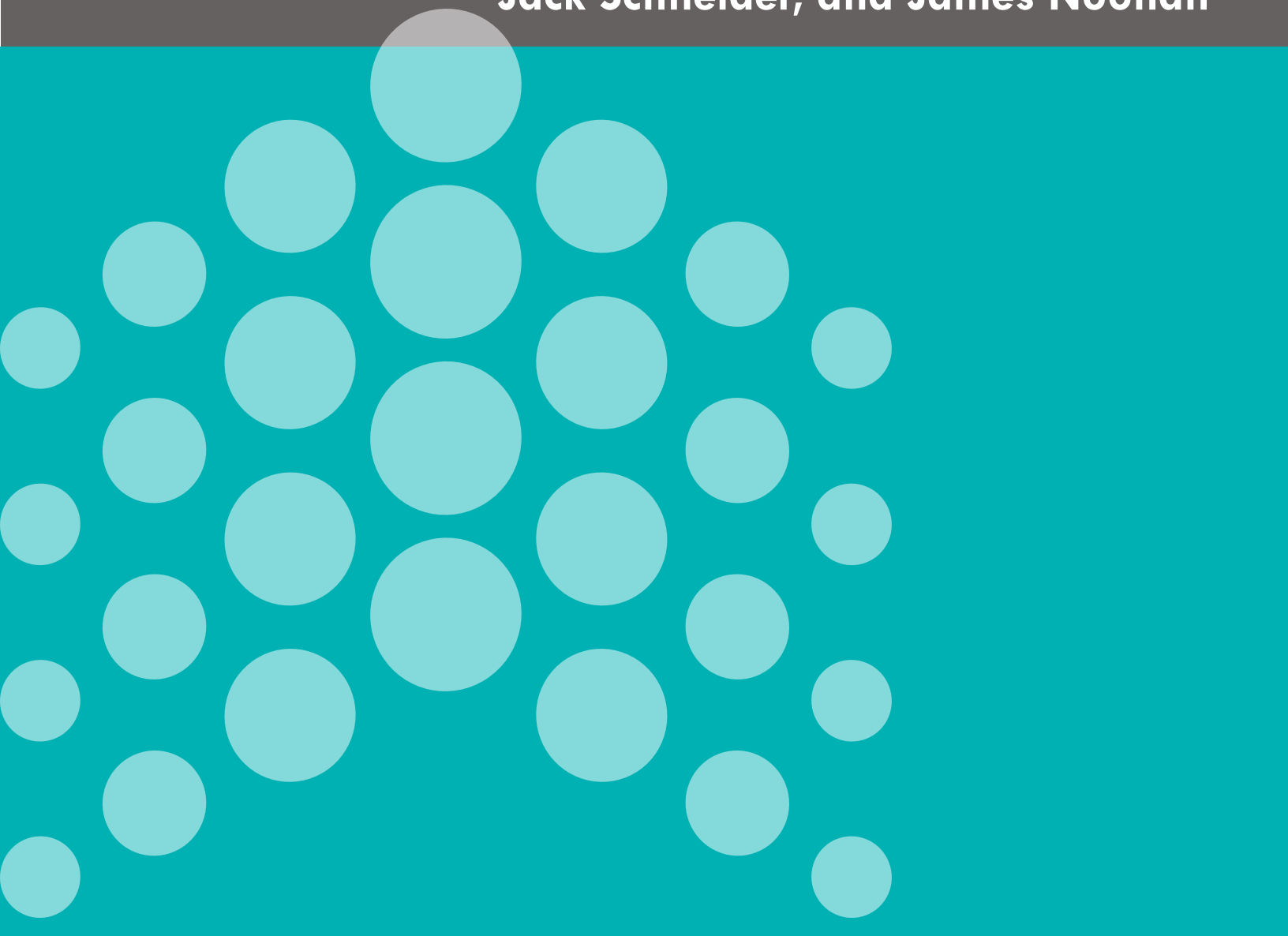


Student Survey-based Measures of School Quality

by Michael P. Kelly, Richard Feistman,
Jack Schneider, and James Noonan



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Introduction

Since the enactment of the No Child Left Behind Act at the end of 2001, Title I funds for all 50 states have stipulated the use of student test scores as a central measure in their educational accountability systems (2002). Despite this requirement, a significant body of scholarship challenges the use of high-stakes tests to make evaluative claims about schools. One obvious limitation is that standardized tests fail to capture basic academic and non-academic components of school quality (Koretz, 2008). This non-inclusion would be less troubling if test scores aligned closely with other valued outcomes. Research suggests, however, that various indicators of school quality are not intrinsically aligned (Rumberger & Palardy, 2005). Equally problematic is the fact that attaching high-stakes to a single measure of school quality has produced unintended consequences related to curriculum and instruction, including increasing teachers' overemphasis on test-preparation (Menken, 2006; Jennings & Bearak, 2014) and under-emphasis on the curriculum of non-tested subjects (Dee, Jacob & Schwartz, 2012).

The Every Student Succeeds Act (ESSA), which is the most recent revision of NCLB, provides states greater autonomy and flexibility regarding their own measurement of, and accountability for, the quality of their schools (2016). While mandated statewide standardized testing is still required in ESSA, the law also requires states to incorporate multiple measures in determining school quality. In light of this shift in policy, this paper examines a system of school quality measures that might accompany student standardized test scores to produce a more holistic view of schools' quality. Such a multi-dimensional system will be less troubled by the side-effects of a single, high-stakes metric, and will produce a more validly complex assessment of the schools who use it.

The Somerville School Quality Framework and the Current Study

The Somerville School Quality Framework (SQF), a precursor to the MCIEA framework, was developed in 2014 to measure school quality more holistically. Working with the Somerville (MA) Public Schools, as well as with a wide range of community stakeholders, scholars from the College of the Holy Cross, Harvard University, and Michigan State University identified nearly three dozen school quality factors that they arranged in a hierarchical taxonomy.

The final draft of this framework included five major categories:

1. Teachers and the Teaching Environment
2. School Culture
3. Resources
4. Indicators of Academic Learning
5. Character and Wellbeing Outcomes

Organizationally, each of these five major categories consisted of two, three, or four subcategories, and each subcategory consisted of two metrics. Each metric was then operationalized for measurement, drawing on three general sources: administrative

data, a teacher perception survey, and a student perception survey (Gagnon & Schneider, 2016). For the full framework, see Appendix A.

This report focuses on the 12 student survey scales used to operationalize the metrics of the SQF. Specifically, we explore two central research questions related to the quality of these 12 scales:

1. Does a common factor analysis of the items in each scale provide evidence that they measure the school quality constructs that they were intended to measure?
2. Does an internal consistency analysis provide evidence that each scale is reliable for measuring different dimensions of school quality?

Overall, we find that the answer to both questions is yes, but that there are still improvements that can be made to the scales to improve their unidimensionality and reliability.

Data Collection

After obtaining IRB approval, the research team distributed surveys electronically via Survey Monkey to 4th-8th grade students and teachers in the Somerville Public Schools during the 2014-2015 and 2015-2016 school years. This study focuses on student surveys from 2015-16. Initial rounds of data cleaning revealed that missing data from the 2014-2015 surveys was not missing completely at random and will require separate study and further analysis. The data was collected confidentially, and there was purposefully no linking variable between teachers and their respective students.

2016 Student Survey Measures

Appendix B provides descriptions of the 12 student perception survey scales used in 2016, as well as the text and answer options of the items that comprised each scale (taken from Gagnon & Schneider, 2016). Each item was measured using a 5-point Likert scale such that, except in the case of reverse-worked items, an answer of 1 represented the lowest level of the school quality attribute and an answer of 5 represented the highest level. Some items were either taken directly from the Panorama Education Student Survey (2015) or added to existing scales on that survey, while other items were created and adapted from a student survey developed by the Consortium on Chicago School Research (Bryk, Bender Sebring, Allensworth, Luppescu, & Easton, 2009), a grit scale (Duckworth, Peterson, Matthews, & Kelly, 2007) and an outgroup acceptance scale (Developmental Studies Center, 2005).

Data Analysis

Sample Demographics

In 2016, a total of 1206 surveys was collected from students in the Somerville Public Schools. The survey was initially designed for enrolled 4th – 8th graders at schools participating in the study (Schneider, White, Jacobsen & Gehlbach, 2018). Thus, responses were excluded from the current study if students indicated that they were

from a non-participating school, if they were not in grades 4 – 8, if they did not answer any survey questions, or if they only answered the demographic survey questions. These exclusions reduced the total number of cases to 1158. The demographic characteristics of the sample are shown in Table 1. All demographic and later analyses were conducted using SPSS 24 software.

Table 1. Demographic characteristics of students with non-excluded responses to the 2016 school quality survey.

Demographic characteristics	N	Percentage
Gender		
Male	537	49.9%
Female	516	47.9%
Other	24	2.2%
Race		
Hispanic	322	33.2%
White	281	29.0%
Other	112	11.5%
Multiracial	98	10.1%
Black	88	9.1%
Asian	56	5.8%
Native American	13	1.3%
Grade Level		
4th grade	288	24.9%
5th grade	201	17.4%
6th grade	234	20.2%
7th grade	198	17.1%
8th grade	237	20.5%

Missing Data

Only about half of the students answered all the survey scale questions (609, 52.6%). Due to a large amount of missing data, we conducted Little’s MCAR tests (Little, 1988) on each scale to assess whether nonresponses to these questions had occurred completely at random. In other words, we tested whether there were predictable, non-random patterns in the missing data that would bias imputed estimates of the missing values, since one of the statistical assumptions of the imputation techniques is that there are no non-random missing data patterns.

The results of these tests are found in Table 2 and indicated that most nonresponses had occurred completely at random. The five scales with data not missing completely at random were excluded from the following analyses. These scales will be evaluated in future work to determine why data were missing. The seven scales analyzed in this paper fit into the School Quality Framework as illustrated in Figure 1.

For the seven scales analyzed in this paper, we used an Estimation Maximization (EM) imputation strategy that replaced 3529 (6.6%) missing data points with estimates that maintain the distribution and correlation parameters of each scale (Allison, 2002).

Though this method can be problematic in terms of underestimating bias, it is an accepted method in exploratory work such as this. Post-EM analysis resulted in a complete dataset that included 1158 cases. Importantly, this sample size far exceeds the recommended sample size of 300-400 participants (DeVellis, 2012) to conduct a common factor analysis.

Table 2. 2016 student survey scales where missing data was and was not missing completely at random according to Little’s MCAR Test

Missing Completely at Random		Not Missing Completely at Random	
Scale	p-value	Scale	p-value
1Aiii	0.073	1Aii	0.002
2Ai	0.128	2Bi	0.015
2Cii	0.954	2Bii	< 0.001
4Bii	0.896	4Bi	0.034
5Ai	0.056	5Di	< 0.001
5Aii	0.063		
5Bi	0.108		

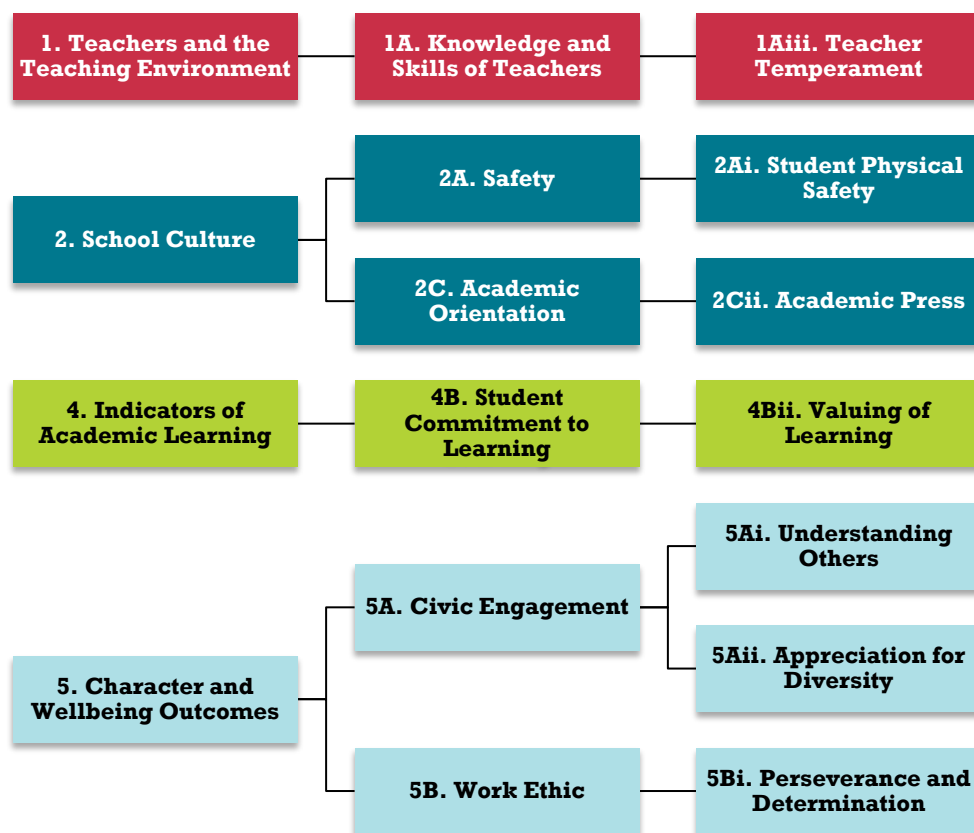
Descriptive Statistics

For a full set of descriptive statistics of the items reported by the 1158 cases, including number of responses, number of missing responses, mean, median, mode, standard deviation, minimum, maximum, and the percentages of responses for each answer option, see Appendix C.

The means of most items were negatively skewed (higher than 3), as were the medians and modes. Some items even had medians and modes of 5, the highest value of the scale. According to the Shapiro-Wilk tests for normality, all items were not normally distributed. These data combine to suggest there is a ceiling effect for some of the items, or that the items are discriminating better against those who score lower on the constructs than those who score higher. No items showed restricted range, and the standard deviations of most items were approximately 1.

One notable finding from the descriptive statistics is that none of the items showed a restricted range, suggesting that the items in every scale are measuring at least a portion of the continuum of each school quality construct. Additionally, each item had a high enough amount of variance and a high enough number of responses to appropriately conduct a common factor analysis (DeVellis, 2012). However, the finding that the items were not normal might be problematic. On the one hand, this could simply mean that for these constructs, Somerville schools are performing above average. On the other, it could provide evidence that the scales need further calibration so that the highest response option is more difficult for students to endorse.

Figure 1: Taxonomy of school quality categories, subcategories, and non-excluded student survey measures Somerville School Quality Framework.



Factor Analysis

A non-rotated factor analysis was conducted on each scale to examine whether each scale measured a single construct. This proved to be the case for all seven scales. The percentage of shared variance explained by each extracted factor is shown in Table 3. The commonalities and factor loadings for each item can be found in Appendix E.

Because these measures of school quality were correlated, as confirmed by the average score correlations for each scale (Table 4), a second factor analysis using oblimin rotation methods was conducted using all items to test if scales would cluster as

Table 3. Shared variance explained by each scale individually in 2016 non-excluded student survey scales

Scale	Shared Variance Explained
1Aiii (Teacher temperament)	47.89%
2Ai (Student physical safety)	37.95%
2Cii (Academic press)	35.95%
4Bii (Valuing of learning)	50.26%
5Ai (Understanding others)	47.08%
5Aii (Appreciation for diversity)	44.05%
5Bi (Perseverance and determination)	45.51%

hypothesized. The results of the factor analysis (Appendix D) confirmed that the items in each of the 7 subscales loaded higher than 0.30, a generally accepted value (Crocker & Algina, 2008), and loaded uniquely on seven respective factors except for item 2Cii2. This suggests that scale 2Cii (Academic press) should be reexamined, especially item 2Cii2 (“When you feel like giving up on a difficult task, how likely is it that your [subject] teacher will help you keep trying?”), to assess why it is loading with the teacher temperament items in addition to the academic press items.

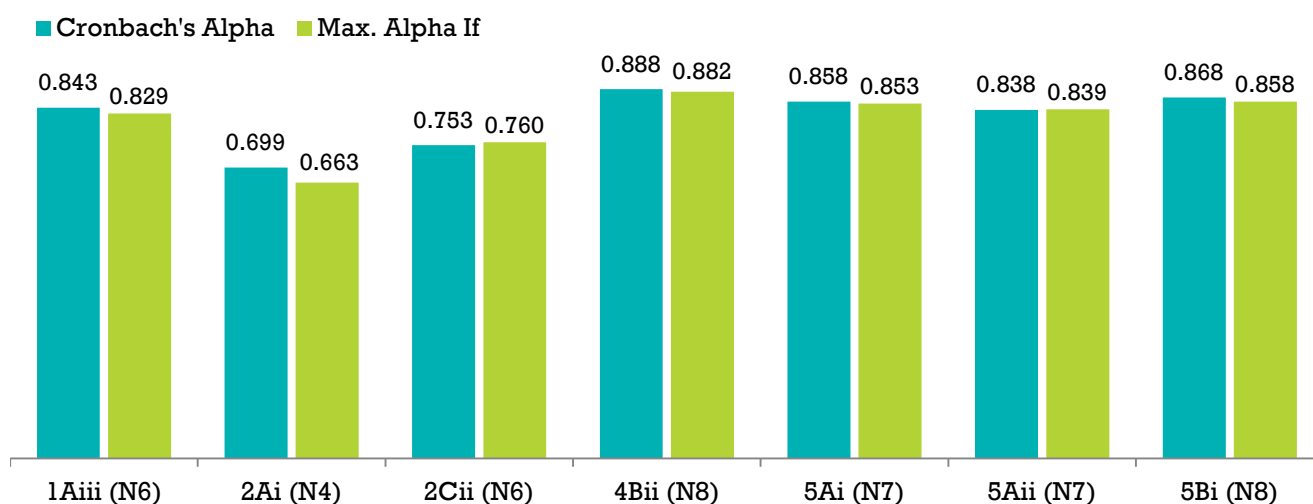
Table 4. Correlations between average scores on non-excluded student survey scales.

Scale Average	1Aiii	2Ai	2Cii	4Bii	5Ai	5Aii	5Bi
1Aiii	1.000						
2Ai	.124	1.000					
2Cii	.533	.192	1.000				
4Bii	.503	.111	.378	1.000			
5Ai	.361	.066	.270	.563	1.000		
5Aii	.174	.259	.207	.292	.361	1.000	
5Bi	.401	.125	.347	.663	.568	.370	1.000

Correlations and Reliabilities

Finally, inter-item correlations, item-total correlations, and reliability values (Appendix F), were calculated for each scale. Table 5 shows the Cronbach’s alpha values for each scale are all above or equal to 0.699. However, according to the maximum alpha-if-deleted values, there are still some items that could be removed to increase the alpha values of the scale even further, specifically in scales 2Cii (Academic press) and 5Aii (Appreciation for diversity).

Table 5. Cronbach’s alpha and maximum alpha-if values of 2016 non-excluded student survey scales



Conclusions and Next Steps

The 2016 student survey data provides evidence that many of the survey scales are, as expected, unidimensional. Notably, each 2016 student survey scale analyzed in this paper was found to load onto just one factor after an un-rotated factor analysis, suggesting that each scale is unidimensional. To further support this finding, when all the survey items were analyzed together in an obliquely rotated factor analysis, the analysis resulted in seven factors for the seven scales analyzed, with only one of the 46 items loading onto two factors. A final finding of the current analysis is that every scale had a Cronbach's alpha value greater than 0.699. Only two scales contained items with alpha-if-deleted values lower than the Cronbach's alpha value of the whole scale. In other words, only 2 of the 7 scales contained items which, if they were deleted, would raise the overall Cronbach's alpha for the scale.

Based on this analysis, there are two suggestions for continued improvement. First, a plan must be considered for how – if at all – the data derived from scales with data not missing at random, can be used. Any such plan must also consider *why* the missing data was not missing at random. This type of analysis could result in identifying survey items that certain types of students consistently do not respond to so that those items can be modified or eliminated from future iterations of the survey. Second, drawing on the analyses in this paper with an eye toward subsequent versions of the survey, we must consider whether specific items can be modified or eliminated to ease the measurement burden on the participating students without compromising the high reliabilities that were found for the 2016 scales. This type of analysis would involve looking across the different descriptive and correlational statistics calculated for each scale and determining which items might be lowering the reliability of the scale. However, this type of analysis would also involve a content analysis of each item in each scale and deciding if any were redundant or unnecessary, cross-referencing the results with the statistical analysis.

Overall and encouragingly, this study of the reliability of the student perception scales finds that each scale appears to be measuring its intended construct (and only its intended construct) and doing so with internal consistency. In other words, this study provides evidence that each of the scales measures a unique student perception, and that the items of each scale work effectively together to explain variability in those perceptions.

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Appendix A: Somerville Framework for School Quality

Essential Inputs

1. Teachers and the Teaching Environment

This category measures the relevant abilities of a school's teachers and the degree to which they are receiving the support they need to grow as professionals. It considers factors like teacher professional qualifications, effective classroom practices, and school-wide support for teaching development and growth.

1A. Knowledge and Skills of Teachers - This subcategory seeks to determine the degree to which a school's teachers are prepared for their classroom assignments. It includes measures of teacher qualifications, effective classroom practices, and professional temperament.

Measure 1A-i: Professional Qualifications - This measure draws on confidential teacher reports on their own comfort teaching grade-level, topics, and student body.

Measure 1A-ii: Effective Practices - This measure draws on confidential student reports about factors like teacher clarity, support of students, and classroom management.

Measure 1A-iii: Teacher Temperament - This measure draws on confidential student reports about the degree to which they perceive their teachers to be interested in and committed to them.

1B. Teaching Environment - This subcategory seeks to determine how well a school supports teachers and enables them to do their work. It includes measures of teacher satisfaction, effective leadership, and school-wide support for teacher development.

Measure 1B-i: Teacher Turnover - This measure draws includes the percent of turnover in the teaching staff not due to retirement.

Measure 1B-ii: Support for Teaching Development and Growth - This measure draws on confidential teacher reports on the quality of professional development.

Measure 1B-iii: Effective Leadership - This measure draws on confidential teacher reports about the degree to which they trust their principals to make good school-wide decisions, as well as on the degree to which their principals are strong instructional leaders.

2. School Culture

This category measures the degree to which the school environment is safe, caring, and academically-oriented. It considers factors like bullying, student/teacher relationships, and regular attendance.

2A. Safety - This subcategory seeks to determine how safe the school environment is. It includes measures of physical safety, bullying, and trust.

Measure 2A-i: Student Physical Safety This measure draws on data from the Youth Risk Behavior Survey on student safety, as well as on confidential student reports about the degree to which they feel physically safe at school.

Measure 2A-ii: Bullying/Trust - This measure draws on confidential student reports about the nature and frequency of school bullying, as well as on the degree to which students respect and get along with each other.

2B. Relationships - This subcategory seeks to determine how welcoming and caring the school environment is. It includes measures of student sense of belonging and of student/teacher relationships.

Measure 2B-i: Sense of Belonging - This measure draws on the degree to which students feel a part of the community of their classroom and their school.

Measure 2B-ii: Student/Teacher Relationships - This measure draws on confidential student reports about the degree to which they feel respected and cared for by their teachers.

2C. Academic Orientation - This subcategory seeks to determine the degree to which a school encourages students to focus on meeting academic challenges. It includes measures of student attendance and graduation, as well as of academic emphasis.

Measure 2C-i: Attendance and graduation - This measure includes the percentage of students chronically absent (more than 10% of days) from school and the percentage of students graduating on time.

Measure 2C-ii: Academic press - This measure draws on confidential student reports about the degree to which teachers push them to do their best, work hard, and understand the material.

3. Resources

This category measures the adequacy of a school's facility, personnel, and curriculum, as well as the degree to which it is supported by the community. It considers factors like physical spaces and materials, class size, and family/school relationships.

3A. Facilities and Personnel - This subcategory seeks to determine the sufficiency of a school's staffing and facilities. It measures the quality of physical spaces and curricular materials, as well as the availability of content specialists and support personnel.

Measure 3A-i: Physical Spaces and Materials - This measure draws on confidential teacher reports about their access to high-quality materials and facilities.

Measure 3A-ii: Content Specialists and Support Staff - This measure includes student-to-art-teacher and student-to-counselor ratios, and draws on confidential teacher reports about the degree to which content specialists and support staff are available and effective.

3B. Curricular Resources - This subcategory seeks to determine the degree to which a school's classrooms include the essential resources teachers need. It includes measures of curriculum strength, curriculum variety, and class size.

Measure 3B-i: Curricular Strength and Variety - This measure includes the percentage of students completing the state core curriculum, the number of different classes offered per student, and the percentage of students participating in Advanced Placement courses in high school. It also draws on confidential teacher reports on the strength and variety of the school curriculum.

Measure 3B-ii: Class Size - This measure includes the average class size at each school, and draws on confidential teacher reports about the degree to which their classes are sufficiently small to support learning.

3C. Community Support - This subcategory seeks to determine the degree to which schools are supported by the surrounding community. It includes measures of family/school relationships, community involvement, and external partnerships.

Measure 3C-i: Family/School Relationships - This measure draws on confidential teacher reports about parental engagement, as well as confidential student reports about the degree to which their parents support them as learners.

Measure 3C-ii: Community Involvement + External Partnerships - This measure draws on confidential teacher reports about the degree to which the school is an integrated part of the community.

Key Outcomes

4. Indicators of Academic Learning

This category measures how much students are learning core academic content, developing their own academic identities, and progressing along positive trajectories. It considers factors like test score growth, engagement in school, problem solving, and college-going rates.

4A. Performance - This subcategory seeks to determine the degree to which students are learning core curricular content. It includes measures of growth on standardized tests and teacher perceptions of student academic growth; in the future, it will also include portfolio assessment scores.

Measure 4A-i: Test Score Growth - This measure includes school-wide scores for student growth on standardized tests, calculated by considering prior testing history and other factors.

Measure 4A-ii: Portfolio or Alternative Assessments - This measure draws on confidential teacher reports about the efforts and abilities of their students. In the future, this measure will also include expert evaluation of the work done by students in classrooms.

4B. Student Commitment to Learning - This subcategory seeks to determine the degree to which students are invested in the process of learning. It includes measures of student engagement and of how much students value learning.

Measure 4B-i: Engagement in School - This measure draws on confidential student reports about their level of focus, participation, and interest in class.

Measure 4B-ii: Valuing of Learning - This measure draws on confidential student reports about how important school is to them and how much they view themselves as learners.

4C. Critical Thinking - This subcategory seeks to determine whether students are learning to think critically about school subjects and the world around them. It includes measures of how much problem solving is emphasized in class and, in the future, will include a measure of student problem solving ability.

Measure 4C-i: Problem Solving Emphasis - This measure draws on confidential teacher reports about how often their students can generate their own interpretations of material and apply knowledge to new situations.

Measure 4C-ii: Problem Solving Skills - In the future, this measure will include an assessment of student ability to address problems without obvious solutions.

4D. College and Career Readiness - This subcategory, applicable to high schools only, seeks to determine the degree to which students are prepared for college and beyond. It measures the percentage of students directly enrolling in two- or four-year colleges upon high school graduation and, in the future, will measure the college and career performance of high school graduates.

Measure 4D-i: College-Going - This measure includes the percentage of students enrolling in college immediately after high school graduation and, in the future, will include the college grades and employment status of graduates.

Measure 4D-ii: College Performance - In the future, this measure will include data on the percentage of students graduating from college in four or six years, as well as the percentage of students requiring college remediation.

5. Character and Wellbeing Outcomes

This category measures the development of traits relevant for full and rewarding lives—in society, the workplace, and their private lives. It considers factors like perseverance and determination, participation in arts and literature, and social and emotional health.

5A. Civic Engagement - This subcategory seeks to determine the degree to which students are prepared to thoughtfully meaningfully interact with others in a diverse society. It measures how well students understand the perspectives of others, as well as the degree to which they get along with those unlike themselves.

Measure 5A-i: Understanding Others - This measure draws on confidential student reports about their ability to understand the views, emotions, and experiences of others.

Measure 5A-ii: Appreciation for Diversity - This measure draws on confidential student reports about their level of comfort working with students from a wide variety of backgrounds.

5B. Work Ethic

This subcategory seeks to determine the degree to which students are willing to work hard on challenging tasks, even in light of setbacks. It includes measures of perseverance, determination, and orientation toward personal growth.

Measure 5B-i: Perseverance and Determination - This measure draws on confidential student reports about their ability to pursue goals, work hard despite challenges, and finish what they start.

Measure 5B-ii: Growth Mindset - This measure draws on confidential student reports about the degree to which they see themselves as capable of expanding their skills through hard work.

5C. Artistic and Creative Traits - This subcategory seeks to determine the degree to which students are being nurtured as artistic and creative people. It includes measures of student participation in arts and, in the future, will include a measure of student creativity.

Measure 5C-i: Participation in Arts and Literature - This measure draws on confidential teacher reports about the frequency of student exposure to the arts.

Measure 5C-ii: Creativity - In the future, this measure will include an assessment of the ability of students to think outside-the-box when presented with different kinds of challenges.

5D. Health - This subcategory seeks to determine the health of students and the degree to which the school supports various health outcomes. It includes measures of student social, emotional, and physical health.

Measure 5D-i: Social and Emotional Health - This measure draws on confidential student reports about how happy, calm, and focused they feel in school.

Measure 5D-ii: Physical Health - This measure draws on data from the Youth Risk Behavior survey on student physical health, as well as on confidential teacher reports about student access to physical education and activity.

Appendix B: 2016 Student Survey Scales with Items and Answer Options

<i>Scale 1Aii: Effective Practices</i>					
	1	2	3	4	5
Overall, how much have you learned from your [subject] teacher?	Almost nothing	A little bit	Some	Quite a bit	A tremendous amount
For this class, how clearly does your [subject] teacher present the information that you need to learn?	Not at all clearly	A little bit clearly	Somewhat	Quite clearly	Extremely clearly
When you need extra help, how good is your [subject] teacher at giving you that help?	Not at all good	Slightly good	Somewhat good	Quite good	Extremely good
How well has your [subject] teacher taught you about the topics of his or her class?	Not at all well	A little well	Somewhat well	Quite well	Extremely well
How good is your [subject] teacher at teaching in the way that you personally learn best?	Not at all good	Slightly good	Somewhat good	Quite good	Extremely good
How well can your [subject] teacher tell whether or not you understand a topic?	Not at all well	A little well	Somewhat well	Quite well	Extremely well
How comfortable are you asking your [subject] teacher questions about what you are learning in his or her class?	Not at all comfortable	A little comfortable	Somewhat comfortable	Quite comfortable	Extremely comfortable
How interesting does your [subject] teacher make the things you are learning in class?	Not at all interesting	A little interesting	Somewhat interesting	Quite interesting	Extremely interesting
How good is your [subject] teacher at helping you learn?	Not at all good	Slightly good	Somewhat good	Quite good	Extremely good

Scale 1Aiii: Teacher Temperament

	1	2	3	4	5
When your [subject] teacher asks how you are doing, how often do you feel that he/she is really interested in your answer?	Never	Once in a while	Sometimes	Frequently	Always
How interested is your [subject] teacher in what you do outside of class?	Not at all interested	A little bit interested	Somewhat interested	Quite interested	Extremely interested
How interested is your [subject] teacher in your career after you finish school?	Not at all interested	A little bit interested	Somewhat interested	Quite interested	Extremely interested
If you walked into class upset, how concerned would your [subject] teacher be?	Not at all concerned	A little bit concerned	Somewhat concerned	Quite concerned	Extremely concerned
If you came back to visit class three years from now, how excited would your [subject] teacher be to see you?	Not at all excited	A little bit excited	Somewhat excited	Quite excited	Extremely excited
If you had something on your mind, how carefully would your [subject] teacher listen to you?	Not at all carefully	A little carefully	Somewhat carefully	Quite carefully	Extremely carefully

Scale 2Ai: Student Physical Safety

	1	2	3	4	5
How often do you worry about violence at your school?	Almost Always	Frequently	Sometimes	Once in a while	Almost never
How often do students get into physical fights at your school?	Very frequently	Regularly	Occasionally	Rarely	Almost never
Overall, how unsafe do you feel at school?	Extremely unsafe	Quite safe	Somewhat unsafe	A little bit unsafe	Not at all unsafe
How often do you feel like you might be harmed by someone at school?	Almost always	Frequently	Sometimes	Once in a while	Almost never

Scale 2Bi: Sense of Belonging

	1	2	3	4	5
Overall, how much do you feel like you belong at your school?	Do not belong	Belong a little bit	Belong somewhat	Belong quite a bit	Almost totally belong
At your school, how accepted do you feel by the other students?	Not at all accepted	A little accepted	Somewhat accepted	Quite accepted	Extremely accepted
How well do people at your school understand you?	Don't understand me	Understand me a little bit	Understand me somewhat	Understand me quite a bit	Understand me extremely well
How much support do the adults at your school give you?	No support at all	A little bit of support	Some support	Quite a bit of support	A great deal of support
How much respect do students in your school show you?	No respect at all	A little bit of respect	Some respect	Quite a bit of respect	A great deal of respect
How connected do you feel to the adults at your school?	Not at all connected	Slightly connected	Somewhat connected	Quite connected	Extremely well connected
How close are your relationships with others at this school?	Not at all close	A little close	Somewhat close	Quite close	Extremely close

Scale 2Bii: Student/Teacher Relationships

	1	2	3	4	5
How much do you enjoy learning from your [subject] teacher?	Not at all	Slightly	Somewhat	Quite a bit	A tremendous amount
How friendly is your [subject] teacher toward you?	Not at all friendly	A little bit friendly	Somewhat friendly	Quite friendly	Extremely friendly
How respectful is your [subject] teacher towards you?	Not at all respectful	Slightly respectful	Somewhat respectful	Quite respectful	Extremely respectful
How excited would you be to have your [subject] teacher again?	Not at all excited	A little excited	Somewhat excited	Quite excited	Extremely excited
How often does your [subject] teacher say something that bothers you?	Very frequently	Frequently	Sometimes	Once in a while	Almost never
How caring is your [subject] teacher towards you?	Not at all caring	Slightly caring	Somewhat caring	Quite caring	Extremely caring
How much do you like your [subject] teacher's personality?	Not at all	Slightly	Somewhat	Quite a bit	A tremendous amount
How often does your [subject] teacher put you in a bad mood during class?	Very frequently	Frequently	Sometimes	Once in a while	Almost never
Overall, how much do you learn from your [subject]?	Almost nothing	A little bit	Some	Quite a bit	A very great amount

Scale 2Cii: Academic Press

	1	2	3	4	5
How much does your [subject] teacher encourage you to do your best?	Does not encourage me at all	Encourages me a little bit	Encourages me some	Encourages me quite a bit	Encourages me a tremendous amount
When you feel like giving up on a difficult task, how likely is it that your [subject] teacher will help you keep trying?	Not at all likely	Slightly likely	Somewhat likely	Quite likely	Extremely likely
How often does your [subject] teacher ask you to explain your answers?	Almost never	Once in a while	Sometimes	Often	Almost always
In this class, how hard does your [subject] teacher make you think?	Not hard at all	Slightly hard	Somewhat hard	Quite hard	Extremely hard
How often does your [subject] teacher ask you to figure out the answer to your own question?	Almost never	Once in a while	Sometimes	Often	Almost always
How often does your [subject] teacher take time to make sure you understand the material?	Almost never	Once in a while	Sometimes	Often	Almost always

Scale 4Bi: Engagement in School

	1	2	3	4	5
How closely do you listen to what is said in class?	Not closely at all	Slightly closely	Somewhat closely	Quite closely	Extremely closely
In this class, how much do you participate?	Not at all	A little bit	Some	Quite a bit	A tremendous amount
How often do you come to class ready to learn?	Almost never	Once in a while	Sometimes	Often	Very often
When you are not in class, how often do you talk about ideas from class?	Almost never	Once in a while	Sometimes	Often	Very often
How often do you get so focused on class activities that you lose track of time?	Almost never	Once in a while	Sometimes	Often	Very often
How excited are you about going to this class?	Not at all excited	A little bit excited	Somewhat excited	Quite excited	Extremely excited
Overall, how interested are you in this class?	Not at all interested	A little bit interested	Somewhat interested	Quite interested	Extremely interested
How often do you take time outside of class to learn more about what you are studying in class?	Almost never	Once in a while	Sometimes	Often	Very often

Scale 4Bii: Valuing of Learning

	1	2	3	4	5
Overall, how important is school to you?	Not at all important	Slightly important	Somewhat important	Quite important	Extremely important
How often do you use ideas from school in your daily life?	Almost never	Once in a while	Sometimes	Often	Very Frequently
How useful do you think school will be to you in the future?	Not at all useful	A little bit useful	Somewhat useful	Quite useful	Extremely useful
How important is it to you to do well in school?	Not at all important	Slightly important	Somewhat important	Quite important	Extremely important
How interesting do you find the things you learn in school?	Not at all interesting	Slightly interesting	Somewhat interesting	Quite interesting	Extremely interesting
How curious are you to learn more about things you talked about in school?	Not at all curious	Slightly curious	Somewhat curious	Quite curious	Extremely curious
How much do you enjoy learning in school?	Do not enjoy at all	Enjoy a little bit	Enjoy somewhat	Enjoy quite a bit	Enjoy a tremendous amount
How much do you see yourself as a learner?	Don't see myself as a learner at all	See myself as a learner a little bit	See myself somewhat as a learner	See myself as a learner to some extent	See myself completely as a learner

Scale 5Ai: Understanding Others

	1	2	3	4	5
How often do you attempt to understand your friends better by trying to figure out what they are thinking?	Almost never	Once in a while	Sometimes	Often	Very frequently
How often do you try to think of more than one explanation for why someone else acted as they did?	Almost never	Once in a while	Sometimes	Often	Very frequently
Overall, how often do you try to understand the point of view of other people?	Almost never	Once in a while	Sometimes	Often	Very frequently
When you are angry at someone, how often do you try to "put yourself in their shoes"?	Almost never	Once in a while	Sometimes	Often	Very frequently
How often do you try to figure out what motivates others to behave as they do?	Almost never	Once in a while	Sometimes	Often	Very frequently
How often do you try to figure out what emotions people are feeling when you meet them for the first time?	Almost never	Once in a while	Sometimes	Often	Very frequently
In general, how often do you try to understand how other people see things?	Almost never	Once in a while	Sometimes	Often	Very frequently

Scale 5Aii: Appreciation for Diversity

	1	2	3	4	5
How comfortable would you be to work on a school project with a student who speaks a different language?	Not at all comfortable	Slightly comfortable	Neutral	Quite comfortable	Very comfortable
How comfortable would you be eating lunch with a student who might be homeless?	Not at all comfortable	Slightly comfortable	Neutral	Quite comfortable	Very comfortable
How comfortable would you be to be assigned a seat next to a student who is overweight?	Not at all comfortable	Slightly comfortable	Neutral	Quite comfortable	Very comfortable
How comfortable would you be to go see a movie with a student of another race/ethnicity?	Not at all comfortable	Slightly comfortable	Neutral	Quite comfortable	Very comfortable
How comfortable would you be sitting with a student who practices a different religion than you?	Not at all comfortable	Slightly comfortable	Neutral	Quite comfortable	Very comfortable
How comfortable would you be visiting the home of a student who lives in a poor neighborhood?	Not at all comfortable	Slightly comfortable	Neutral	Quite comfortable	Very comfortable
How comfortable would you be visiting the home of a student who lives in a wealthy neighborhood?	Not at all comfortable	Slightly comfortable	Neutral	Quite comfortable	Very comfortable

Scale 5Bi: Perseverance and Determination

	1	2	3	4	5
If you face a problem while working towards an important goal, how well can you keep working?	Not well at all	Slightly well	Somewhat well	Quite well	Extremely well
How often do you stay focused on the same goal for several months at a time?	Almost never	Once in a while	Sometimes	Frequently	Almost always
Some people pursue some of their goals for a long time, and others change their goals frequently. Over the next several years, how likely are you to continue to pursue one of your current goals?	Not likely at all	Slightly likely	Somewhat likely	Quite likely	Extremely likely
How important is it to you to finish things you start?	Not important at all	Slightly important	Somewhat important	Quite important	Extremely important
How confident are you that you can remain focused on what you are doing, even when there are distractions?	Not confident at all	Slightly confident	Somewhat confident	Quite confident	Extremely confident
When faced with a very challenging task, how hard do you work to complete it?	Not hard at all	Slightly hard	Somewhat hard	Quite hard	Extremely hard
If you fail to reach an important goal, how likely are you to try again?	Not likely at all	Slightly likely	Somewhat likely	Quite likely	Extremely likely
How likely is it that you can motivate yourself to do unpleasant tasks if they will help you accomplish your goals?	Not likely at all	Slightly likely	Somewhat likely	Quite likely	Extremely likely

Appendix C: 2016 Student Survey Descriptive Statistics

Scale 1Aiii: Teacher Temperament

#	Item Text	N	Mean	Median	Mode	S.D.	Min.	Max.
1	When your homeroom teacher asks how you are doing, how often do you feel that he/she is really interested in your answer?	1158	3.84	4.00	5.00	1.13	1.00	5.00
2	How interested is your homeroom teacher in what you do outside of class?	1158	3.18	3.00	4.00	1.21	1.00	5.00
3	How interested is your homeroom teacher in your career after you finish school?	1158	3.50	4.00	4.00	1.23	1.00	5.00
4	If you walked into class upset, how concerned would your homeroom teacher be?	1158	3.74	4.00	4.00	1.15	1.00	5.00
5	If you came back to visit class three years from now, how excited would your homeroom teacher be to see you?	1158	3.94	4.00	5.00	1.13	1.00	5.00
6	If you had something on your mind, how carefully would your homeroom teacher listen to you?	1158	3.96	4.00	4.00	1.02	1.00	5.00

Scale 2Ai: Student Physical Safety

#	Item Text	N	Mean	Median	Mode	S.D.	Min.	Max.
1	How often do you worry about violence at your school?	1158	3.85	4.00	5.00	1.29	1.00	5.00
2	How often do students get into physical fights at your school?	1158	3.90	4.00	4.00	1.10	1.00	5.00
3	Overall, how unsafe do you feel at school?	1158	4.34	5.00	5.00	1.01	1.00	5.00
4	How often do you feel like you might be harmed by someone at school?	1158	4.39	5.00	5.00	0.98	1.00	5.00

Scale 2Cii: Academic Press

#	Item Text	N	Mean	Median	Mode	S.D.	Min.	Max.
1	How much does your homeroom teacher encourage you to do your best?	1158	4.32	4.32	5.00	0.86	1.00	5.00
2	When you feel like giving up on a difficult task, how likely is it that your homeroom teacher will help you keep trying?	1158	4.14	4.14	5.00	0.94	1.00	5.00
4	How often does your homeroom teacher ask you to explain your answers?	1158	4.13	4.13	5.00	0.91	1.00	5.00
5	In this class, how hard does your homeroom teacher make you think?	1158	3.66	4.00	4.00	0.93	1.00	5.00
6	How often does your homeroom teacher ask you to figure out the answer to your own question?	1158	3.47	3.47	4.00	1.03	1.00	5.00
7	How often does your homeroom teacher take time to make sure you understand the material?	1158	4.07	4.07	5.00	0.90	1.00	5.00

Scale 4Bii: Value of Learning

#	Item Text	N	Mean	Median	Mode	S.D.	Min.	Max.
1	Overall, how important is school to you?	1158	4.28	5.00	5.00	0.95	1.00	5.00
2	How often do you use ideas from school in your daily life?	1158	3.55	4.00	4.00	1.10	1.00	5.00
3	How useful do you think school will be to you in the future?	1158	4.41	5.00	5.00	0.94	1.00	5.00
4	How important is it to you to do well in school?	1158	4.53	5.00	5.00	0.79	1.00	5.00
5	How interesting do you find the things you learn in school?	1158	3.80	4.00	4.00	0.98	1.00	5.00
6	How curious are you to learn more about things you talked about in school?	1158	3.68	4.00	4.00	1.06	1.00	5.00
7	How much do you enjoy learning in school?	1158	3.75	4.00	4.00	1.09	1.00	5.00
8	How much do you see yourself as a learner?	1158	3.99	4.00	5.00	0.99	1.00	5.00

Scale 5Ai: Understanding Others

#	Item Text	N	Mean	Median	Mode	S.D.	Min.	Max.
1	How often do you attempt to understand your friends better by trying to figure out what they are thinking?	1158	3.67	4.00	4.00	1.10	1.00	5.00
2	How often do you try to think of more than one explanation for why someone else acted as they did?	1158	3.52	4.00	4.00	1.10	1.00	5.00
3	Overall, how often do you try to understand the point of view of other people?	1158	3.65	4.00	4.00	1.04	1.00	5.00
4	When you are angry at someone, how often do you try to "put yourself in their shoes"?	1158	2.88	3.00	3.00	1.27	1.00	5.00
5	How often do you try to figure out what motivates others to behave as they do?	1158	3.20	3.00	3.00	1.18	1.00	5.00
6	How often do you try to figure out what emotions people are feeling when you meet them for the first time?	1158	3.43	3.43	4.00	1.18	1.00	5.00
7	In general, how often do you try to understand how other people see things?	1158	3.45	3.45	3.00	1.11	1.00	5.00

Scale 5Aii: Appreciation for Diversity

#	Item Text	N	Mean	Median	Mode	S.D.	Min.	Max.
1	How comfortable would you be to work on a school project with a student who speaks a different language?	1158	3.52	3.52	3.00	1.15	1.00	5.00
2	How comfortable would you be eating lunch with a student who might be homeless?	1158	3.77	4.00	5.00	1.11	1.00	5.00
3	How comfortable would you be to be assigned a seat next to a student who is overweight?	1158	3.87	4.00	5.00	1.12	1.00	5.00
4	How comfortable would you be to go see a movie with a student of another race/ethnicity?	1158	4.29	5.00	5.00	0.93	1.00	5.00
5	How comfortable would you be sitting with a student who practices a different religion than you?	1158	4.14	4.06	5.00	1.00	1.00	5.00
6	How comfortable would you be visiting the home of a student who lives in a poor neighborhood?	1158	3.87	4.00	5.00	1.10	1.00	5.00
7	How comfortable would you be visiting the home of a student who lives in a wealthy neighborhood?	1158	4.03	4.00	5.00	1.01	1.00	5.00

Scale 5Bi: Perseverance and Determination

#	Item Text	N	Mean	Median	Mode	S.D.	Min.	Max.
1	If you face a problem while working towards an important goal, how well can you keep working?	1158	3.95	4.00	4.00	0.90	1.00	5.00
2	How often do you stay focused on the same goal for several months at a time?	1158	3.57	3.78	3.00	1.03	1.00	5.00
3	Some people pursue some of their goals for a long time, and others change their goals frequently. Over the next several years, how likely are you to continue to pursue one of your current goals?	1158	3.74	4.00	4.00	1.05	1.00	5.00
4	How important is it to you to finish things you start?	1158	4.10	4.00	5.00	0.90	1.00	5.00
5	How confident are you that you can remain focused on what you are doing, even when there are distractions?	1158	3.66	4.00	4.00	1.00	1.00	5.00
6	When faced with a very challenging task, how hard do you work to complete it?	1158	4.01	4.00	4.00	0.92	1.00	5.00
7	If you fail to reach an important goal, how likely are you to try again?	1158	3.86	4.00	5.00	1.03	1.00	5.00
8	How likely is it that you can motivate yourself to do unpleasant tasks if they will help you accomplish your goals?	1158	3.69	4.00	4.00	1.04	1.00	5.00

Appendix D: Factor Analysis Results for All Student Survey Items from Non-Excluded Scales, Using Oblimin Rotation.

Items	Factor Loadings						
	1	2	3	4	5	6	7
5Bi2	.733						
5Bi7	.699						
5Bi8	.621						
5Bi3	.609						
5Bi1	.592						
5Bi4	.592						
5Bi5	.582						
5Bi6	.485						
5Aii6		.754					
5Aii3		.717					
5Aii5		.711					
5Aii4		.703					
5Aii2		.690					
5Aii1		.468					
5Aii7		.414					
1Aiii4			.738				
1Aiii5			.705				
1Aiii6			.661				
1Aiii2			.657				
1Aiii1			.613				
1Aiii3			.547				
5Ai7				.701			
5Ai5				.647			
5Ai3				.639			
5Ai2				.637			
5Ai6				.616			
5Ai1				.569			
5Ai4				.543			
2Ai4					.674		
2Ai1					.626		
2Ai3					.606		
2Ai2					.528		
4Bii1						-.689	
4Bii4						-.650	
4Bii3						-.646	
4Bii7						-.572	
4Bii5						-.503	
4Bii8						-.483	
4Bii2						-.450	
4Bii6						-.445	
2Cii4							.575
2Cii5							.529
2Cii7							.505
2Cii2			.343				.486
2Cii1							.465
2Cii6							.423

Appendix E: 2016 Unrotated Factor Analysis Tables

Scale 1Aiii: Teacher Temperament

Item	Item Text	Initial Communalities	Factor Loading	Extraction Communalities
5	If you came back to visit class three years from now, how excited would your homeroom teacher be to see you?	0.460	0.742	0.550
6	If you had something on your mind, how carefully would your homeroom teacher listen to you?	0.467	0.737	0.543
4	If you walked into class upset, how concerned would your homeroom teacher be?	0.451	0.732	0.536
1	When your homeroom teacher asks how you are doing, how often do you feel that he/she is really interested in your answer?	0.372	0.663	0.440
2	How interested is your homeroom teacher in what you do outside of class?	0.379	0.652	0.425
3	How interested is your homeroom teacher in your career after you finish school?	0.343	0.616	0.380

Note. Determinant = 0.119; KMO = 0.872; $\chi^2 = 2461$, $p < 0.001$

Scale 2Ai: Student Physical Safety

Item	Item Text	Initial Communalities	Factor Loading	Extraction Communalities
4	How often do you feel like you might be harmed by someone at school?	0.302	0.699	0.489
1	How often do you worry about violence at your school?	0.248	0.615	0.379
3	Overall, how unsafe do you feel at school?	0.249	0.606	0.367
2	How often do students get into physical fights at your school?	0.196	0.532	0.283

Note. Determinant = 0.507; KMO = 0.743; $\chi^2 = 783$, $p < 0.001$

Scale 2Cii: Academic Press

Item	Item Text	Initial Communalities	Factor Loading	Extraction Communalities
2	When you feel like giving up on a difficult task, how likely is it that your homeroom teacher will help you keep trying?	0.438	0.737	0.542
7	How often does your homeroom teacher take time to make sure you understand the material?	0.359	0.685	0.469
1	How much does your homeroom teacher encourage you to do your best?	0.392	0.680	0.463
5	In this class, how hard does your homeroom teacher make you think?	0.230	0.525	0.275
4	How often does your homeroom teacher ask you to explain your answers?	0.215	0.511	0.261
6	How often does your homeroom teacher ask you to figure out the answer to your own question?	0.143	0.383	0.147

Note. Determinant = 0.259; KMO = 0.806; $\chi^2 = 1559$ p < 0.001

Scale 4Bii: Value of Learning

Item	Item Text	Initial Communalities	Factor Loading	Extraction Communalities
7	How much do you enjoy learning in school?	0.587	0.798	0.636
5	How interesting do you find the things you learn in school?	0.559	0.756	0.572
6	How curious are you to learn more about things you talked about in school?	0.538	0.739	0.546
8	How much do you see yourself as a learner?	0.459	0.711	0.505
1	Overall, how important is school to you?	0.477	0.699	0.488
2	How often do you use ideas from school in your daily life?	0.452	0.695	0.483
4	How important is it to you to do well in school?	0.426	0.636	0.404
3	How useful do you think school will be to you in the future?	0.373	0.621	0.386

Note. Determinant = 0.024; KMO = 0.909; $\chi^2 = 4319$ p < 0.001

Scale 5Ai: Understanding Others

Item	Item Text	Initial Communalities	Factor Loading	Extraction Communalities
7	In general, how often do you try to understand how other people see things?	0.489	0.757	0.573
5	How often do you try to figure out what motivates others to behave as they do?	0.442	0.719	0.516
3	Overall, how often do you try to understand the point of view of other people?	0.441	0.714	0.510
6	How often do you try to figure out what emotions people are feeling when you meet them for the first time?	0.421	0.696	0.485
2	How often do you try to think of more than one explanation for why someone else acted as they did?	0.402	0.683	0.466
1	How often do you attempt to understand your friends better by trying to figure out what they are thinking?	0.377	0.641	0.410
4	When you are angry at someone, how often do you try to "put yourself in their shoes"?	0.307	0.580	0.336

Note. Determinant = 0.076; KMO = 0.903; $\chi^2 = 2971$ p < 0.001

Scale 5Aii: Appreciation for Diversity

Item	Item Text	Initial Communalities	Factor Loading	Extraction Communalities
6	How comfortable would you be visiting the home of a student who lives in a poor neighborhood?	0.492	0.758	0.575
3	How comfortable would you be to be assigned a seat next to a student who is overweight?	0.464	0.725	0.525
5	How comfortable would you be sitting with a student who practices a different religion than you?	0.481	0.721	0.520
4	How comfortable would you be to go see a movie with a student of another race/ethnicity?	0.480	0.712	0.507
2	How comfortable would you be eating lunch with a student who might be homeless?	0.447	0.686	0.471
1	How comfortable would you be to work on a school project with a student who speaks a different language?	0.248	0.514	0.264
7	How comfortable would you be visiting the home of a student who lives in a wealthy neighborhood?	0.219	0.470	0.221

Note. Determinant = 0.085; KMO = 0.865; $\chi^2 = 2848$ p < 0.001

Scale 5Bi: Perseverance and Determination

Item	Item Text	Initial Communalities	Factor Loading	Extraction Communalities
2	How often do you stay focused on the same goal for several months at a time?	0.505	0.741	0.549
7	If you fail to reach an important goal, how likely are you to try again?	0.431	0.707	0.500
4	How important is it to you to finish things you start?	0.435	0.695	0.483
1	If you face a problem while working towards an important goal, how well can you keep working?	0.395	0.674	0.454
8	How likely is it that you can motivate yourself to do unpleasant tasks if they will help you accomplish your goals?	0.386	0.657	0.432
3	Some people pursue some of their goals for a long time, and others change their goals frequently. Over the next several years, how likely are you to continue to pursue one of your current goals?	0.402	0.655	0.429
5	How confident are you that you can remain focused on what you are doing, even when there are distractions?	0.356	0.641	0.411
6	When faced with a very challenging task, how hard do you work to complete it?	0.365	0.618	0.382

Note. Determinant = 0.052; KMO = 0.913; $\chi^2 = 3416$ p < 0.001

Appendix F: 2016 Inter-Item Correlations, Item-Total Correlations, and Alpha-If Deleted Values

Scale 1Aiii: Teacher Temperament

	1	2	3	4	5	6	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	1.000						0.599	0.821
2	0.440	1.000					0.602	0.821
3	0.393	0.508	1.000				0.568	0.829
4	0.461	0.479	0.423	1.000			0.655	0.811
5	0.491	0.442	0.450	0.559	1.000		0.663	0.809
6	0.521	0.425	0.410	0.568	0.575	1.000	0.658	0.812

Scale 2Ai: Student Physical Safety

	1	2	3	4	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	1.000				0.496	0.635
2	0.354	1.000			0.438	0.663
3	0.371	0.298	1.000		0.480	0.639
4	0.412	0.371	0.444	1.000	0.543	0.605

Scale 2Cii: Academic Press

	1	2	4	5	6	7	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	1.000						0.547	0.705
2	0.582	1.000					0.588	0.691
4	0.319	0.323	1.000				0.459	0.727
5	0.317	0.333	0.344	1.000			0.475	0.723
6	0.182	0.237	0.277	0.306	1.000		0.351	0.760
7	0.474	0.530	0.331	0.341	0.247	1.000	0.565	0.699

Scale 4Bii: Value of Learning

	1	2	3	4	5	6	7	8	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	1.000								0.656	0.875
2	0.513	1.000							0.653	0.876
3	0.500	0.418	1.000						0.582	0.882
4	0.563	0.380	0.506	1.000					0.597	0.881
5	0.441	0.550	0.443	0.421	1.000				0.709	0.870
6	0.459	0.572	0.400	0.386	0.648	1.000			0.693	0.871
7	0.509	0.538	0.453	0.463	0.666	0.635	1.000		0.743	0.866
8	0.512	0.467	0.429	0.497	0.512	0.505	0.594	1.000	0.664	0.874

Scale 5Ai: Understanding Others

	1	2	3	4	5	6	7	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	1.000							0.583	0.844
2	0.474	1.000						0.626	0.838
3	0.524	0.498	1.000					0.652	0.835
4	0.309	0.403	0.385	1.000				0.535	0.853
5	0.427	0.506	0.488	0.460	1.000			0.659	0.833
6	0.464	0.433	0.495	0.400	0.494	1.000		0.636	0.836
7	0.451	0.494	0.522	0.474	0.555	0.560	1.000	0.693	0.828

Scale 5Aii: Appreciation for Diversity

	1	2	3	4	5	6	7	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	1.000							0.476	0.835
2	0.443	1.000						0.629	0.809
3	0.376	0.545	1.000					0.647	0.806
4	0.306	0.422	0.535	1.000				0.637	0.810
5	0.346	0.415	0.506	0.627	1.000			0.645	0.808
6	0.380	0.580	0.552	0.490	0.521	1.000		0.686	0.800
7	0.250	0.277	0.259	0.373	0.380	0.393	1.000	0.427	0.839

Scale 5Bi: Perseverance and Determination

	1	2	3	4	5	6	7	8	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1	1.000								0.622	0.853
2	0.494	1.000							0.686	0.845
3	0.418	0.573	1.000						0.606	0.854
4	0.488	0.448	0.452	1.000					0.642	0.851
5	0.414	0.479	0.428	0.460	1.000				0.593	0.855
6	0.452	0.386	0.348	0.519	0.407	1.000			0.569	0.858
7	0.462	0.527	0.435	0.489	0.453	0.464	1.000		0.652	0.849
8	0.452	0.536	0.435	0.422	0.402	0.373	0.482	1.000	0.608	0.854