Evidence on the Validity, Reliability, and Usability of the Measuring and Improving Student-Centered Learning (MISCL) Toolkit

Technical Appendix

ELIZABETH D. STEINER, JONATHAN SCHWEIG, KAREN CHRISTIANSON, SOPHIE MEYERS, JULIA H. KAUFMAN

RAND
CORPORATION

The RAND Corporation is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest.

RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

Support RAND

Make a tax-deductible charitable contribution at

www.rand.org/giving/contribute

www.rand.org

Contents

Tables

Abbreviations

ATP	American Teacher Panel
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
FRL	free or reduced-priced lunch
MISCL	Measuring and Improving Student-Centered Learning
NCES	National Center for Education Statistics
NMEF	Nellie Mae Education Foundation
PD	professional development
PSAT	Preliminary Scholastic Aptitude Test
RMSEA	Root Mean Square Error of Approximation
SCL	student-centered learning
SRMR	Standardized Root Mean Residual

Appendix A. Data Sources and Methods

In this appendix, we briefly describe each data source used to gather validity evidence for the Measuring and Improving Student-Centered Learning (MISCL) Toolkit, and the analyses conducted for each data source.

Tool Development Phase

We collected evidence of validity in two phases. In Phase I, Tool Development, we developed the tools and gathered evidence based on content by conducting a literature review and vetting the instruments with our Advisory Board of experts.

Literature Review

The aim of the literature review was to identify the key tenets of student-centered learning (SCL) and collect evidence on the effectiveness of SCL approaches, with a focus on high school settings. We used evidence from our literature review to identify the key tenets of SCL to focus on in our instruments (e.g., learning is personalized). The four SCL tenets advocated by the Nellie Mae Education Foundation (NMEF) served as a starting point for the review: (1) Learning is personalized; (2) learning is competency-based; (3) learning takes place anytime, anywhere; and (4) learning is engaging. We prioritized descriptive studies focused on implementation and empirical studies linking implementation with student academic and socioemotional outcomes. Our searches included NMEF's existing catalog of resources on SCL, recent reviews of literature on SCL, the websites of organizations (e.g., research firms, foundations, technical assistance providers) that focus on SCL, searches using Google Scholar, and suggestions solicited from our Advisory Board members. We prioritized studies that were published after 1990, but we made a handful of exceptions for studies that we regarded as seminal or that were often cited by other sources. We reviewed 225 studies, excluding websites, blog posts, and advocacy pieces.

Next, we searched for existing tools and instruments that measured the strategies and contextual conditions derived from the literature review and documented whether evidence of validity of those instruments had been published. To develop our instruments, we drew on existing tools and items as appropriate, particularly if there was some evidence of validity, and developed items where necessary. See Steiner et al. (undated) for a more complete description of the literature review, tool review, and tool development process.

Expert Advisory Board

We gathered additional evidence based on content by engaging an Advisory Board of experts to provide iterative feedback on the draft instruments. We summarized the feedback shared by

Advisory Board members and NMEF staff after each meeting and used it to refine the instruments. More detail on the advisory board and the iterative feedback process can be found in Steiner et al. (undated).

Pilot Test I

We gathered preliminary evidence based on response processes in the Tool Development Phase through a small-scale pilot test of the surveys in two school systems in November 2017. We purposefully selected two school systems in New England to vary on key characteristics (e.g., size, urbanicity, and extent of SCL implementation) and piloted the surveys in their high schools. Small numbers of high school students, instructional staff, and school and district leaders completed the surveys and participated in brief cognitive interviews (or, in the case of students, focus groups). We offered a $50 incentive to instructional staff, school leaders, and district leaders who took the surveys and participated in the cognitive interviews as a thank you for their time participating in each instrument. We offered each school an incentive of $200 as a thank you for hosting the visit. Table A.1 shows the number of participants in each site. The cognitive interviews focused on how participants in each group understood and responded to survey items and on their suggestions for improvement.

Table A.1. Pilot Test I Participants

	Number of Participants	
Instrument	Site 1	Site 2
Instructional staff survey	5	5
Student survey	5	4
School leader survey	2	2
District leader survey	1	1
Instructional staff survey cognitive interviews	5	5
Student survey cognitive focus groups	1	1
District leader survey cognitive interviews	1	1
School leader survey cognitive interviews	2	2
Classroom observations	2	3

Field Testing Phase

In our Field Testing Phase, in March and April 2019 we gathered more-comprehensive evidence of response processes and obtained the data necessary to perform analyses that would provide evidence of internal structure, relationships with external variables, and reliability and

precision. In addition to administering the surveys to leaders, instructional staff, and students through Pilot Test II, we also administered surveys to two supplementary samples: a sample of teachers from the RAND American Teacher Panel (ATP) and a sample of district and school leaders.

Pilot Test II

To gather additional evidence of response processes for the instruments and the MISCL Toolkit as a whole, we collaborated with two school systems to conduct a second pilot test. The two school systems participating in Pilot Test II varied on key characteristics, such as size, extent of SCL implementation, and urbanicity. In addition to testing the surveys as part of Pilot Test II, we also observed use of the MISCL Toolkit in action to assess its usability. Each school system fielded the surveys to high school students, instructional staff, school leaders, and district leaders, conducted walkthroughs and a student focus group, fielded the teacher logs, and engaged in a reflection conversation. Table A.2 displays the number of participants in each activity across the Pilot Test II sites.

We made two-day in-person visits to each pilot test school to conduct cognitive interviews and focus groups with selected students, instructional staff, school leaders, and district leaders who participated in the surveys; students who participated in the focus group; instructional staff who participated in the walkthroughs and logs; and students, instructional staff, and administrators who participated in the reflection conversation. We offered a $50 incentive to instructional staff, school leaders, and district leaders who took the survey and participated in the cognitive interviews as a thank you for their time. We offered each school an incentive of $500 as a thank you for hosting the visit and administering the student survey.

Table A.2. Pilot Test II Participants

	Number of Participants	
Instrument or Activity	**Site 1**	**Site 2**
Instructional staff survey	19	20
Student survey	208	169
School leader survey	1	4
District leader survey	2	3
Student focus group	5	5
Classroom walkthroughs	6	12
Instructional staff log	3	3
Reflection conversation	5	8
Instructional staff survey cognitive interviews	7	6
Student survey cognitive focus groups	3	5
District leader survey cognitive interviews	1	1

	Number of Participants	
Instrument or Activity	Site 1	Site 2
School leader survey cognitive interviews	0	0
Classroom walkthrough cognitive interviews	2	3
Instructional staff log cognitive interviews	1	3
Reflection conversation cognitive interviews	1	3

The cognitive interviews with survey respondents focused on how participants in each group understood and responded to survey items and also on participants' suggestions for improvement. The cognitive interviews with participants in the walkthroughs, logs, and reflection conversations focused on their experience participating in the activity, their understanding of the purpose of the activity, and suggestions for improvement.

Supplemental Instructional Staff Survey Sample: American Teacher Panel

The instructional staff survey was administered to a randomly selected subsample of the RAND ATP, a nationally representative panel of teachers. The entire panel consists of more than 24,000 teachers across the United States who have agreed to respond periodically to education-related surveys. Our randomly selected ATP subsample consisted of 553 high school teachers in 518 schools. These schools were, on average, 52 percent white, 15 percent black, and 23 percent Latinx. Nearly 42 percent of the students (64 percent) taught by teachers in our sample were eligible for free or reduced-price lunch (FRL). More than half of the schools (55 percent) were Title I eligible. Nearly two-thirds of the teacher respondents were female (63 percent), and the average amount of experience in the teaching profession was 16 years.

Supplemental District and School Leader Survey Sample: New England
Superintendents and Principals

To obtain a supplemental sample of district and school leaders, we administered the district and school leader surveys to a convenience sample of New England superintendents and principals.[1] We obtained publicly available contact information for public school superintendents and principals by searching district and school websites and then sent the surveys to them via email. We contacted 764 superintendents and received 47 responses; we contacted 896 school leaders and received 102 responses (see Table A.3). We offered each respondent an incentive of $25 to thank them for their time. Three superintendents and two school leaders also participated

---

[1] New England states included in the sample were Maine, New Hampshire, Vermont, Connecticut, and Rhode Island.

in cognitive interviews; they each received an additional $25 as a thank you for sharing their perspectives on the surveys.

Table A.3 includes response rates for all survey samples: the pilot test samples, the ATP sample, and the New England district and school leader sample.

Table A.3. Survey Response Rates

	Student Survey	Instructional Staff Survey	School Leader Survey	District Leader Survey
Pilot Test I	48% (n = 208/430)	37% (n = 19/51)	50% (n = 1/2)	100% (n = 2/2)
Pilot Test II	77% (n = 169/217)	90% (n = 18/20)	100% (n = 4/4)	100% (n = 3/3)
ATP sample		61% (n = 553/903)		
New England school/district leader sample			11% (n = 102/896)	6% (n = 47/764)

Analytic Approach

Cognitive Interviews and Focus Groups

The interviews and focus groups were transcribed and analyzed by survey question or activity; responses were compiled and synthesized across respondents. The results were used to provide results on both instrument validity (i.e., evidence based on response processes) and usability of the MISCL Toolkit.

Confirmatory Factor Analysis and Correlations Among Survey Scales

We conducted Confirmatory Factor Analysis (CFA) on the student, instructional staff, and school leader surveys from Pilot Test II and our supplementary survey samples of teachers and school and district leaders to confirm that sets of items could be combined to form scales as intended. These analyses were conducted on each scale one at a time, and the integrity of the scales was evaluated.

The CFA model (e.g., Bollen, 1989; Jöreskog, 1969) can be expressed as

$$y = \lambda\eta + \varepsilon \qquad (1)$$

where y is a p-variate vector of observed (or manifest) scores measuring η. η is an $m \times 1$ vector of latent variable scores on m factors, assumed to be normally distributed with 0

expectation. λ is a $p \times m$ matrix of factor loadings. ε represents a $p \times 1$ vector of residuals (also called *uniquenesses*, [e.g., Bollen, 1989]), which are assumed to be identically and independently distributed. This factor model yields the following covariance structure model:

$$\Sigma = \Lambda \Phi \Lambda^T + \Psi \tag{2}$$

where Λ is the $p \times m$ matrix of factor loadings described above, Φ is an $m \times m$ matrix of factor covariances, and Ψ is a $p \times p$ diagonal matrix containing unique (residual) variances. For the analyses of student, instructional staff, and school leader data, we used a weighted least squares estimator, which is appropriate for use with Likert-type and categorial responses (Muthén and Kaplan, 1985). In the district leaders survey, we used a robust maximum likelihood estimator because of our limited sample size.

In general, given a $p \times p$ population covariance matrix Σ and a p-vector of free parameters Θ, a testable null hypothesis can be expressed as

$$H_0 : \Sigma(\Theta) = \Sigma \tag{3}$$

In other words, the population covariance matrix, Σ, is equal to the model implied covariance matrix, $\Sigma(\Theta)$ (Bollen, 1989). The null hypothesis can be tested using a chi-square test statistic.

Because the power of this chi-square test statistic is related to both sample size and model complexity (Rensvold and Cheung, 1998; Tomarken and Waller, 2003), even trivial model-data misfit can result in a rejection of the null hypothesis. To address this issue, we evaluated the appropriateness of our factor models using three commonly used fit indexes: the Root Mean Square Error of Approximation (RMSEA) (Steiger, 1980), the Comparative Fit Index (CFI) (Bentler, 1990), and the Standardized Root Mean Square Residual (SRMR) (Bentler, 1995). All CFA models were estimated in Mplus, Version 7.1 (Muthén and Muthén, 2012).

After assessing the integrity of the survey-based scales using these fit indexes, we inspected modification indexes and the residual correlations to diagnose and identify issues with model-data fit. Where there was evidence of substantial issues with the intended scales, information from the CFAs was used to revise the scales (e.g., eliminating redundant items by identifying items with highly correlated uniquenesses). We then repeated these CFAs on the respecified scales.

Once the CFAs had been completed, we created composite scale scores representing each of the factors by averaging over the items in each scale. We calculated the correlations among these scale scores to determine the extent to which there was evidence that the scales were measuring distinct constructs that were associated in ways that were consistent with theory.

Linear Regression Models

We collected information on student achievement (Preliminary Scholastic Aptitude Test [PSAT] scores), student characteristics (race/ethnicity, English language learner status, special education status, grade level) and discipline (in school and out of school suspension) for students in the Pilot Test II school systems. These data were provided to us by the schools. Using students' unique identifiers, we merged these administrative data into the survey file. This analytic file allowed us to gather evidence based on relationships with external variables for the student survey.

The analytic files for the instructional staff, school leader, and district leader surveys were created in two steps. First, we merged data from Pilot Test II schools and districts with data collected from supplemental samples. The instructional staff survey consisted of teachers from the ATP. The school leader and district leader surveys consisted of individuals from the New England school and district leader sample. For the instructional staff and school leader surveys, we first linked all of the schools in our analytic survey files to their National Center for Education Statistics (NCES) identifiers. Then, using these identifiers, we were able to link to the Common Core of Data, which is maintained by the NCES and contains information about enrollment, demographics, and Title I services eligibility.

We used conventional linear regression models to explore the extent to which student survey scales were associated with student outcomes. These models had the form as follows:

$$y_{ij} = \beta_0 + \beta_1 x_{ij} + \delta_j + e_{ij},$$ (4)

where y_{ij} is the outcome (e.g., PSAT scores or an indicator of whether a student had been suspended) for student i in school j. x_{ij} is an individual student's scale score for one scale on the student survey. δ_j is a school fixed effect. e_{ij} is a residual term with mean zero and variance σ^2. The association of the survey scale with student outcomes is tested by the null hypothesis that $\beta_1 = 0$. For regressions exploring the associations of student characteristics on survey responses, we used the same model, where y_{ij} is a survey scale score and x_{ij} is the student characteristic. Student characteristics consisted of race/ethnicity, grade level, and FRL eligibility.

For regressions exploring the associations of school characteristics on survey responses (i.e., instructional staff and school leader survey scales), we used the linear regression model as follows:

$$y_i = \beta_0 + \beta_1 x_i + e_i,$$ (5)

where y_i is the survey scale score for respondent i. x_i is a school characteristic. School characteristics consisted of Title I status and the percentage of students who identified as black

or Hispanic/Latinx. e_i is a residual term with mean zero and variance σ^2. The association of the survey scale with background characteristics is tested by the null hypothesis that $\beta_1 = 0$. For instructional staff survey regressions, we included a school random effect to account for the fact that teachers were nested in schools.

Models for Internal Consistency and Inter-Rater Reliability

We examined the extent to which the scales were precise and free from measurement error. For the student survey, where we had multiple respondents in the same schools (from Pilot Test II), we calculated two types of reliability: *Internal consistency* was estimated based on Cronbach's alpha, and *inter-rater reliability* was estimated based on an index of within-school consensus. For the instructional staff and school leader surveys, we did not have sufficient data from Pilot Test II and our supplementary samples to estimate inter-rater reliability—therefore, we calculated only internal consistency for those scales. Cronbach's alpha is estimated using the following formula for each scale:

$$\alpha = \frac{N\bar{c}}{\bar{v} + (N-1)\bar{c}} \qquad (6)$$

N is the number of items in the scale. $\bar{c}$ is the average inter-item covariance. $\bar{v}$ is the average item variance.

Inter-rater reliability was estimated for each item using Brown and Hauenstein's (2005) a_{wg}, which is a kappa-like coefficient for multiple raters. a_{wg} compares the observed item variance to a null distribution, which is estimated as the maximum possible variance, conditional on a group's mean, as follows:

$$a_{wg} = 1 - \frac{2S_x^2}{\left[(H+L)M - M^2 - HL\right]\left[\frac{k}{(k-1)}\right]} \qquad (7)$$

S_x^2 is the observed item variance for item x, M is the observed item mean, and H and L are the maximum and minimum scale values, respectively. k is the number of individuals providing responses for item x in the same cluster (here, in the same school).

Appendix B. Results Table

Table B.1. Student Survey Scales

Scale Name	Question and Items Included in Scale	Descriptives			
		Mean	SD	Alpha	*awg*
Student choice		2.71	0.99	0.85	
Estimate the number of classes in which you typically make the following types of choices.					
	I choose how I learn content (such as group work, independent work, online research)				0.12
	I choose which topics or skills I focus on in my classes				0.12
	I choose the order in which I complete activities and assignments				0.08
	I make choices based on my interests				0.17
	I make choices based on my individual learning needs				0.20
	I choose how to show what I have learned (e.g., through projects, presentations, performances, models, and traditional tests or papers)				0.12
Tailored learning opportunities		2.67	0.87	0.79	
Estimate the number of classes in which you typically have these experiences.					
	The activities and assignments I work on are tailored to my learning needs				0.14
	The activities and assignments I work on are tailored to my personal interests				0.30
	The topics I work on focus on things I haven't learned yet				0.28
	I work on different topics than other students in my class are working on				0.25
	I work on the same topics but different activities and assignments than other students in my class are working on				0.20
	I work with my instructors to figure out what I need learn throughout the year				0.08
Course credit based on mastery		1.47	0.69	0.71	
Mark the response that best fits your typical experience.					
	I can skip some required classes if I show I have learned the material (e.g., if I can demonstrate knowledge and skills for Algebra I, I do not need to take the course)				0.21
	I can skip some activities or assignments if I can show I've learned the material				0.20
	I can receive credit for classes at any point in the year if I can show I've learned the material				0.11
Diverse learning opportunities		3.12	0.97	0.75	
Estimate the number of classes in which you typically have these experiences.					
	I use a variety of learning materials (such as books or computer software) to accommodate my needs, interests, and learning pace				0.12
	In a single class period, I have opportunities to learn in different ways, such as listening to the instructor present to the whole class, working in small groups, or working independently				0.19
	If I don't understand something the first time, I can learn the same material in a different way				0.23
	If I don't understand something, other students in the class help me learn it				0.12
Personalization supports		2.95	0.94	0.87	
Estimate the number of classes in which you typically have these experiences.					

Scale Name	Question and Items Included in Scale	Descriptives			
		Mean	SD	Alpha	*awg*
	My instructor and I decide together how I will demonstrate that I have learned the material				0.16
	To show that I am ready to move on to the next topic, I must demonstrate my learning in more than one way				0.16
	My instructors provide different ways for me to demonstrate that I have learned the material				0.26
	When I am not on track to meet the requirements for, or pass, a class, I get extra help				0.06
	When I do poorly on assignments or assessments, I can demonstrate what I have learned with a different type of assessment				0.13
	If I do poorly on an assignment or assessment on the first try, I can try again later without my score or grade being lowered				0.09
	If I do poorly on an assignment or assessment I get extra help before I try again				0.13
	My instructor gives me specific suggestions for how I can improve my work				0.23
Objectives shared		3.35	1.09	0.84	
	Estimate the number of classes in which you typically have these experiences.				
	My instructors give me a clear list of topics and skills I am supposed to learn				0.17
	I know ahead of time what knowledge and skills I will need to demonstrate on assessments (e.g., tests, projects, portfolios)				0.22
Mastery-based learning		2.78	0.97	0.89	
	Estimate the number of classes you have taken, or are taking, this year in which you typically have these experiences.				
	As soon as I have learned a skill or topic, I can show my instructor that I have learned it				0.12
	I am able to skip some topics or assignments if I can show I know the material				–0.07
	My instructor gives tests or assessments at the beginning of a unit to see how much I already know				0.15
	I can demonstrate that I have learned the material at a different time than other students in my class				0.13
	I receive additional supports to help me catch up to or keep the same learning pace as other students in my classes				0.10
Nonmastery-based learning		3.64	1.11	0.75	
	Estimate the number of classes you have taken, or are taking, this year in which you typically have these experiences.				
	I progress to the next unit at the same time as my classmates, regardless of whether I have mastered all the material				–0.04
	My instructors require me to get through a certain amount of material even if I am working at my own pace				0.07
	My instructors require that I complete every activity and assignment even if I already know the material				0.01
Engagement		3.40	1.06	0.86	
	Estimate the number of classes you have taken, or are taking, this year in which you typically have these experiences.				
	My classes really make me think				0.17
	The topics I'm studying are interesting and challenging				0.29
	The activities and assignments I work on are challenging, but not so difficult I can't complete them				0.25

Scale Name	Question and Items Included in Scale	Descriptives			
		Mean	SD	Alpha	*awg*
High expectations		3.87	1.15	0.89	

Estimate the number of classes you have taken, or are taking, this year in which you typically have these experiences.

My instructors have high expectations for my behavior					0.05
My instructors have high expectations for my academic performance					0.13
Nontraditional coursework		1.47	0.54	0.83	

During this school year, have you . . . ?

Taken classes at another high school, either online or in person					0.31
Taken college classes, either online or in person					0.29
Taken other online classes					0.35
Participated in learning experiences or classes at a community organization					0.41
Worked on an independent study (e.g., writing a play or building a website), or a project you designed yourself					0.38
Participated in a project outside of school that combined things you learned in multiple classes					0.41
Learning experiences outside of school		1.74	0.58	0.73	

During this school year, have you . . . ?

Participated in a community service project, volunteer activity, or service learning project					0.50
Held a job or an internship					0.48
Participated in college visits					0.49
Participated in field trips and other experiences that connect what you are learning in school to real life					0.51
Outside-of-school work		3.60	0.99	0.75	

When you are not in school, do you . . . ?

Work on schoolwork (including homework, projects, or unfinished classwork)					0.14
Practice concepts or skills you learned in school					0.21
Learn concepts or skills that are different from what you learn in school					0.22
Real-world relevancy		2.68	1.04	0.91	

Estimate the number of classes you have taken, or are taking, this year in which you typically have these experiences.

I connect what I learn outside of school (e.g., in an internship, college course, at home) with what I learn in school					0.17
I use things I learned outside of school to complete assignments for school					0.17
I find information for a project from sources outside of school					0.11
I get course credit for learning I do outside of school					–0.08
I develop real-world products (i.e., for real-world audiences and purposes) that are valued by persons outside of the classroom (e.g., writing a letter to Congress, prototyping an exhibit for a local museum, developing a resume for a job)					–0.04
I apply what I learn in school to my life outside of school					0.14
I discuss how someone could use something I learned in school in a real job					0.13
I connect what I am learning to life outside the classroom					0.14

Scale Name	Question and Items Included in Scale	Descriptives			
		Mean	SD	Alpha	*awg*
Metacognitive strategies		3.19	0.96	0.93	
Estimate the number of classes you have taken, or are taking, this year in which you typically have these experiences.					
My instructors show or explain strategies I can use to help me learn					0.13
My instructors encourage me to ask other students for help before asking for help from my instructor					0.20
My instructors show or explain strategies I can use to work successfully in a group with other students					0.24
My instructors encourage me to connect what I am learning to prior knowledge					0.26
I collaborate with other students when doing so will help me learn					0.15
My instructors show or explain strategies students can use to complete all assignments and assessments on time					0.23
My instructors expect me to explain how I arrived at my answer					0.28
I ask questions when I don't understand the material					0.20
My instructors teach me to advocate for the support I need at school					0.15
During discussions and group work, I question other students and ask them to explain their thinking					0.07
Other students give me feedback intended to help me improve my work					0.16
Student engagement		3.24	1.04	0.82	
Estimate the number of classes you have taken, or are taking, this year in which you typically have these experiences.					
I keep trying even if something is hard					0.05
I am eager to participate in my classes					0.19
I am excited about going to my classes					0.16
I talk about ideas from my classes when I am not in school					0.09
Student agency		3.14	1.02	0.85	
Estimate the number of classes you have taken, or are taking, this year in which you typically have these experiences.					
I know strategies I can use to help me get my schoolwork done					0.18
I have opportunities to contribute to decisions that affect other students (e.g., a grading policy)					0.00
I provide input about what, how, when, and where I want to learn					0.10
I work with my instructors to create and modify my personal learning plan					0.06
When I make choices about what, how, when, and where I want to learn, I am confident I am making the right choice					0.03
When I have trouble completing an assignment or activity, I know how to get help					0.15
Instructor support I		3.38	1.00	0.87	
Estimate the number of classes you have taken, or are taking, this year in which you typically have these experiences.					
If I am not satisfied with my score on an assessment, my instructors help me figure out how I can still do well					0.22
My instructors encourage me to take responsibility for my work					0.17
When I have trouble learning something new, my instructors give me advice and strategies that					0.24

Scale Name	Question and Items Included in Scale	Descriptives			
		Mean	SD	Alpha	*awg*
	help me to keep trying				
	My instructors show or explain strategies I can use to clearly communicate my ideas				0.28
	My instructors show or explain strategies I can use to help me manage stress				0.13
Study habits		2.85	0.86	0.90	
	Thinking across all your classes, mark the response that best indicates how often you do each of these things.				
	Before I begin working on an assignment I think about the things I will need to do to complete that assignment				0.46
	I use what I have learned from previous assignments and what I have learned in school to do new assignments				0.55
	When I am studying a topic, I try to make everything fit together				0.54
	When I'm learning something new, I try to connect the things I'm learning about with what I already know				0.53
Progress monitoring		3.89	1.16	0.92	
	Estimate the number of classes you have taken, or are taking, this year in which you typically have these experiences.				
	I check on my progress at least a few times a year (for example, using an online gradebook or portfolio)				–0.15
	I check my progress in school whenever I want, without asking an instructor				0.01
	I am expected to keep track of my progress at least a few times a year (e.g., by using an online gradebook or portfolio)				0.01
	I check my progress in school frequently				–0.03
Discuss learning progress		2.73	0.93	0.80	
	How often do you . . . ?				
	Discuss your learning progress with your instructors				0.37
	Discuss your learning progress with other school staff, such as the counselor or principal				0.34
	Discuss your learning progress with your family				0.43
Instructor support II		3.38	1.14	0.87	
	Estimate the number of your classes in which your instructors . . .				
	Show or explain strategies you can use to keep track of your learning progress in school				0.08
	Help you plan to meet your personal goals				0.19
	Expect you to review your own assignments to see where you need to improve				0.19
Collaborative decisionmaking		2.81	0.72	0.88	
	Please indicate how much you agree with each of the following statements.				
	My opinions are respected in this school				0.62
	If students express concerns to their instructors about their classes, instructors are responsive				0.67
	If students express concerns to school administrators about this school, administrators are responsive				0.65
	Students are seen and treated as leaders by adults in this school				0.61
Technological supports		3.17	0.72	0.91	

		Descriptives			
Scale Name	Question and Items Included in Scale	Mean	SD	Alpha	*awg*
Please indicate how much you agree with each of the following statements.					
	I have access to technology (such as a computer, tablet, or smartphone) outside of school whenever I need it				0.67
	I have access to technology (such as a computer, tablet, or smartphone) during school whenever I need it				0.66
	I have reliable access to the internet during school whenever I need it				0.64
	It is easy for me to access my school materials and assignments online				0.70
Instructor support III		3.06	0.68	0.81	
Please indicate how much you agree with each of the following statements.					
	I can go to at least one instructor with things that I need to talk about				0.64
	Most of my instructors care about how I'm doing				0.69
	I feel safe in this school				0.74
Helpful feedback		3.53	1.01	0.92	
Estimate the number of classes you have taken, or are taking, this year in which you typically have these experiences.					
	The feedback that I receive on my schoolwork helps me understand how to improve				0.18
	I receive helpful comments to let me know what I did wrong on assignments				0.30
	If I have trouble understanding material when I'm working on my own, I am able to obtain help quickly				0.33
	My instructors don't let me give up when the work gets hard				0.23
	I receive the help I need to complete the most challenging schoolwork				0.26
Individual attention		2.99	0.69	0.88	
How much do you agree with the following statements about your high school?					
	Instructors make sure that all students are planning for life after graduation				0.65
	My instructors give me individual attention when I need it				0.72
	All students are encouraged to go to college				0.69
	Instructors pay attention to all students				0.62

NOTE: SD = standard deviation.

Table B.2. Instructional Staff Survey Scales

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
Student choice		3.64	1.24	0.85

Please indicate how often the students in your first academic class of the day engage in the following practices.

- Students choose what learning materials (e.g., books, computer software) they use
- Students choose how they learn content (e.g., group work, independent work, online research)
- Students choose what topics or skills they focus on
- Students choose the order in which they complete assignments and activities
- Students make choices based on their interest
- Students make choices based on their individual learning needs
- Students choose how to demonstrate what they have learned (e.g., through projects, presentations, performances, or models, as well as traditional tests or papers)

Personalized learning opportunities		4.59	1.28	0.72

Please indicate how often the students in your first academic class of the day engage in the following practices.

- Students use a variety of learning materials (e.g., books, computer software) to accommodate their needs, interests, and learning pace
- Students learn material in different ways in a single instructional period (e.g., listening to me present to the whole class, working in small groups, working independently)
- Students work on different topics than their classmates at the same time

Competency-based instruction		4.51	0.69	0.74

Please estimate the number of classes you teach for which the following statements about your instruction are true.

- I provide students with a set of standards and/or competencies at the start of a course
- My daily learning objectives are aligned to standards and/or competencies
- Learning materials are aligned to standards and/or competencies
- The activities and assignments students work on are aligned to standards and/or competencies
- Course assessments are aligned to standards and/or competencies
- Students know ahead of time (e.g., at the beginning of a course) what knowledge and skills they will need to demonstrate on assessments (e.g., tests, projects, portfolios)

Mastery-based learning		2.91	0.89	0.87

Please indicate how often each of the following statements are true of your instruction in your first academic class of the day.

- Students must demonstrate they have learned a topic before they can move onto a new topic
- Students demonstrate they have learned a skill or topic as soon as they are ready
- Students can skip some topics or assignments within my course if they can demonstrate they know the material
- When starting on a new topic or competency, I first identify students' prior knowledge and skills with a diagnostic test or assessment
- Students can demonstrate that they have learned the material at different times than other students in the class

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
	Students receive additional supports to help them catch up to or keep the same learning pace as their peers			
Nonmastery-based learning		3.92	0.84	0.62

Please indicate how often each of the following statements are true of your instruction in your first academic class of the day.

    I require students to get through a certain amount of material even if they are working at their own pace

    All students take tests and assessments at the same time

    I require students to complete every activity and assignment even if they already know the material

High-quality assessments		3.26	0.91	0.84

Think only of the summative assignments (e.g., end-of-unit or semester assignments) you give to assess student learning in your first academic class of the day. Estimate how many of these assignments are of the following types.

    Construction of arguments and critiquing the reasoning of others

    Justification or evidence-based support of ideas/responses

    Extended project or performance task requiring demonstration of multiple course competencies

    Application of knowledge or skills with real-world connections

    Analysis of ideas or responses requiring development or explanation of ideas

    Connection of your content to content in another course (e.g., if you teach science, connection to history)

Meeting the needs of different students		4.10	0.68	0.60

Thinking across all the classes you teach, please indicate the extent to which the following statements are true for the population in bold.

    I meet the learning needs of **students whose academic work is ahead of most students their age**

    I meet the learning needs of **students whose academic work is at the expected level for their age**

    I meet the learning needs of **students whose academic work is behind most students their age**

    I meet the learning needs of **special education students**

    I meet the learning needs of **English language learners**

    I encourage **all students** to pursue postsecondary education

Student-centered instructional practices		3.35	0.93	0.84

Please indicate how often you use the following strategies in your first academic class of the day.

    I ask open-ended questions to promote students' engagement with big ideas

    I have students explore alternative methods for solving problems/analyzing text

    I have students make sense of and solve unfamiliar problems

    I have students engage in reasoning and argumentation around key disciplinary ideas

    I have students analyze others' ideas and arguments

    I have students design or create problems or topics for other students to investigate

Nontraditional coursework		3.32	1.07	0.83

Please indicate whether students in your high school have had the opportunity to participate in the activities listed below and whether these opportunities are available for credit.

    Courses at another high school, either online or in person

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
	College courses, either online or in person			
	Other online courses			
	Learning experiences or courses at a community organization			
	Independent studies (e.g., writing a play or building a website) or projects that students design themselves			
	Projects outside of school that combine what students have learned in multiple courses			
Learning experiences outside of school		3.45	1.07	0.78

Please indicate whether students in your high school have had the opportunity to participate in the activities listed below and whether these opportunities are available for credit.

	Community service projects, volunteer activities, or service learning project			
	Jobs or internships			
	College visits			
	Field trips and other experiences that connect what students are learning in school to real life			
Real-world relevancy		3.28	0.95	0.77

Please estimate the number of classes you teach for which the following statements about your instruction are true.

	Students can get credit in my class for learning they do in activities outside of my class or school, such as those in a community-based organization			
	I discuss with my students how the skills they are learning could be applied in a job			
	Students connect what they are learning to life outside of school (e.g., calculating how much it will cost to pay off student loans based on set salary and interest rate)			
	Students connect what they learn outside of school (e.g., in an internship, college course) with what they learn in school			
	Students develop real-world products (i.e., for authentic audiences and purposes) that are valued by people outside of the classroom (e.g., writing a letter to Congress, prototyping an exhibit for a local museum, developing a resume for a job)			
	My curricula focus on helping students apply what they have learned to real-world contexts and situations			
Socioemotional competencies		2.26	0.49	0.93

Please indicate which of the following are included as part of your district and/or high school curriculum (i.e., you are expected to address these in your instruction) and/or are encouraged by district or school leaders.

	Collaborating with other students on a variety of activities or assignments			
	Understanding and managing emotions			
	Handling stress			
	Persisting through challenging activities or assignments			
	Making responsible decisions			
	Establishing and maintaining positive relationships			
	Feeling and showing empathy for others			
	Developing positive learning mindsets (e.g., growth mindset, sense of purpose and belonging)			
	Communicating their thoughts and emotions clearly and appropriately			
	Developing a sense of positive identity			
Metacognitive strategies		4.26	0.63	0.84

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
	Please indicate how frequently you or the students in your first academic class of the day engage in each of the following practices.			
	I show or explain strategies students can use to help each other learn			
	I encourage students to ask their peers for help before seeking my assistance			
	I show or explain how to work in a collaborative way that holds students mutually accountable			
	I encourage students to connect what they are learning to prior knowledge			
	I provide advice and strategies to help students persist when they have trouble learning a new skill or concept			
	I show or explain strategies students can use to complete all assignments and assessments on time			
	I expect students to explain how they arrived at their answer			
	I show or explain strategies students can use to monitor their own thinking (i.e., metacognitive skills)			
	I encourage students ask clarifying questions if they don't understand a lesson or assignment			
	I teach students to advocate for the support they need at school			
	I encourage students to question each other and push each other's thinking during group work and discussions			
	I expect students to provide feedback on each other's work to further each other's learning			
Student engagement		3.55	0.85	0.77
	Please estimate the number of students in your first academic class of the day for which the following statements are true.			
	Students keep trying when faced with a challenging activity or assignment			
	Students are often so focused on learning activities that they lose track of time			
	Students are eager to participate in learning activities			
Student agency		3.01	0.96	0.80
	Please estimate the number of students in your first academic class of the day for which the following statements are true.			
	Students have opportunities to contribute to decisions in my classroom that affect other students (e.g., grading policy)			
	Students provide meaningful input regarding what, how, when, and where they learn			
	When given opportunities and options for what, how, when, and where they learn, students make well-informed choices			
	Students advocate for the support they need at school			
	Students work with me to create and modify their personal learning plans			
Progress monitoring		3.59	0.53	0.71
	Please indicate the extent to which you agree with each of these statements about how students in your first academic class of the day monitor their progress.			
	I help students check their progress at least a few times a year			
	Students can check their progress in my class whenever they want, without asking me			
	Students are expected to monitor their own progress at least a few times a year (e.g., by using an online gradebook or portfolio)			
Review of academic data		3.49	0.91	0.77

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
	Please indicate how frequently you review the following types of data or information about the performance of your students or your instruction for your first academic class of the day.			
	Summative or formative information about student performance on specific skills			
	Assessment data that is built into curriculum software			
	Information about specific students who need extra assistance			
	Information about specific students who are progressing at the expected pace			
	Information about specific students who are at risk of dropping out or not making sufficient progress			
Review of nonacademic data		3.20	0.95	0.84
	Please indicate how frequently you review the following types of data or information about the performance of your students or your instruction for your first academic class of the day.			
	Information about students' needs, interests, learning pace, and goals from parents/guardians			
	Information about students' needs, learning pace, and learning processes from students			
	Information about student work habits and study skills			
	Information from students about their interests and goals			
	Feedback from students on your instruction and/or learning climate			
Instructor data use		3.02	0.70	0.81
	Please indicate how frequently you use student achievement data for each of the following purposes in your first academic class of the day.			
	Tailor the content of instruction to individual students' needs, interests, and/or pace			
	Develop recommendations for tutoring or other educational support services for particular students			
	Group students within my class(es)			
	Offer students extended learning opportunities (e.g., extended-day programs, Saturday classes, or an extended school year)			
	Assess students' prior knowledge and skills to facilitate students' connection to new material and skill development			
	Set expectations/goals for student achievement			
	Monitor individual students' progress and understanding of key concepts			
	Reflect on and discuss learning with students			
Student data use		3.42	1.11	0.89
	Please estimate how frequently students in your first academic class of the day use data (including achievement data, feedback on assignments, and other performance data) for the following purposes.			
	To discuss their learning progress with me			
	To determine where they need to improve			
	To set their own performance goals			
	To improve the quality of their work/assignments			
Collaborative decisionmaking		3.67	1.18	0.87
	Please indicate how frequently the following activities to take place at your school.			
	School leaders work with instructional staff to establish, revise, and discuss progress toward school goals			
	Students provide input on school goals			

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
	School leaders solicit instructional staff's input in issues related to curriculum, instruction, and improving student performance			
	Instructional staff participate in school-level instructional decisionmaking through formal groups/structures (e.g., curriculum committee, school improvement teams)			
	Students participate in school-level decisions that could affect them through formal groups/structures			
	Community members and/or parents participate in school-level decisions that affect students through formal groups/structures			
Instructor autonomy		2.99	0.67	0.78

Please indicate the extent to which you agree with each of the following statements about your high school.

    School leaders encourage instructional staff to explore new instructional ideas and innovations

    Instructional staff at my school feel responsibility and ownership over school-level decisions that affect students

    If instructional staff express concerns to school leaders about the school, school leaders are responsive

Scale Name	Question and Items Included in Scale	Mean	SD	Alpha
SCL-focused professional learning		2.72	0.75	0.85

Please indicate the extent to which you agree or disagree with the following statements about professional development (PD) provided by your district or high school.

    My school and/or district provides instructional staffs with many PD opportunities focused on student-centered learning

    I receive the PD I need to support student-centered learning practices in my school

Scale Name	Question and Items Included in Scale	Mean	SD	Alpha
High-quality professional learning and feedback		2.75	0.66	0.78

Please indicate the extent to which you agree or disagree with the following statements about PD provided by your district or high school.

    The PD provided by my school/district includes coaching or other supports to help instructional staff apply what they have learned to their classroom instruction

    The PD provided by my school/district is responsive to instructors' needs, interests, and pace

    I receive feedback on my instruction more than once a year

Scale Name	Question and Items Included in Scale	Mean	SD	Alpha
Instructor guidance and responsiveness		2.98	0.48	0.79

Please indicate the extent to which you agree with each of the following statements about your high school.

    Instructional staff explain to students why it is important for them to understand their own progress in school and take responsibility for their own learning

    If students express concerns to school leaders about their school, school leaders are responsive

    Students have advising periods built into their schedule to talk about their progress with instructional staff

    Most instructional staff care about how students are feeling

    All instructors in my school emphasize high performance standards for students

    All students who need the most help receive it

    All students feel safe in this school

Scale Name	Question and Items Included in Scale	Mean	SD	Alpha
Understanding student needs		2.99	0.50	0.42

Please indicate the extent to which you agree with each of the following statements.

    For each student, I know when they are having trouble learning something

    I have access to high-quality data that help me adapt the pace or content of instruction to meet students' needs, interests, and/or learning pace

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
Structural supports for SCL		2.84	0.56	0.86

Please indicate the extent to which you agree with each of the following statements.

    My school has well-defined learning expectations for all students

    The course standards used in my school are measurable

    My school supports the use of multiple measures of student performance to determine whether or when students advance to more challenging content

    My school supports alternative pathways to graduation

    Most educators at this school embrace student-centered learning

    My school's data system is easy to access

    My school's data system provides real-time data that are actionable

    Students in my school have written, individualized learning plans that document student learning needs

    My school has a flexible block of time during the school day when students can choose to seek extra help in classes where they are struggling on assignments, and they can choose how to use this time

    My school has a flexible block of time during the school day where students are assigned get extra help in the class where they currently need support

Inadequate supports for SCL in school		2.17	0.74	0.80

Please indicate whether the following conditions exist at your high school and the degree to which each is an obstacle to your efforts to promote student-centered learning.

    An inadequate amount of time to prepare personalized lessons for all students

    School leaders do not embrace student-centered learning

    School facilities/design do not support student-centered learning

    Lack of access to high quality content or learning materials

    Lack of supports for high-needs students (i.e., students with more learning needs)

    Inadequate data to help instructors personalize instruction for students

Inadequate technological supports		2.00	0.74	0.72

Please indicate whether the following conditions exist at your high school and the degree to which each is an obstacle to your efforts to promote student-centered learning.

    Inadequate number of computers or other devices (e.g., tablets) to accommodate all students

    Slow internet connection or inadequate bandwidth in the school

    Lack of reliable internet access outside of school for students

    Computer-based instruction and school curriculum are not aligned

    Online learning programs do not allow instructors to assign specific activities or units to individual students

Inflexibility of current structures/supports		2.45	0.72	0.70

Please indicate whether the following conditions exist at your high school and the degree to which each is an obstacle to your efforts to promote student-centered learning.

    Lack of flexibility in the curriculum instructional staff are required to teach (i.e., need to teach specific material in a specific time frame)

    Pressure to cover specific material on which students will be tested

    Tracking students into prespecified pathways or sets of courses

		Descriptives		
Scale Name	**Question and Items Included in Scale**	**Mean**	**SD**	**Alpha**
	High levels of student absenteeism			
	Standards (e.g., state standards) don't support student-centered learning			

NOTE: SD = standard deviation.

Table B.3. School Leader Survey Scales

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	**SD**	**Alpha**
Student choice*		2.58	0.73	0.90

Please estimate how many courses there are at your high school in which you would see students typically making the following choices on a regular basis.

    Students choose what learning materials (such as books or computer software) they use

    Students choose how they learn content (e.g., group work, independent work, online research)

    Students choose what topics or skills they focus on

    Students choose the order in which they complete assignments and activities

    Students make choices based on their interests

    Students make choices based on their individual learning needs

    Students choose how to demonstrate what they have learned (e.g., through projects, presentations, performances, or models, as well as traditional tests or papers).

Flexible credit options		2.27	0.89	0.80

Please indicate whether your district allows each of the following, as well as whether high school students do this.

    Skip required courses if they show they have learned the material (e.g., students who demonstrate knowledge and skills for Algebra I can take the next level of math)

    Skip seat time for parts of a course (e.g., units or topics) if they show they have learned the material

    Receive credit for a course at any point in the year if they show they have learned the material

    Receive credit for a course or learning opportunity they have designed themselves

    Adjust their schedules (e.g., length of classes, order of classes) monthly or more frequently to address their needs, interests, and pace

    Take alternative routes to earning credits beyond seat time (e.g., project based on established rubrics or online badges earned)

    Take blended courses that involve some online instruction and some in-person instruction in a traditional classroom setting

Diverse summative assessment strategies		3.19	0.69	0.79

Please estimate in how many high school courses you would actually see the following assessment practices if you walked into classrooms or other high school learning environments today.

    Performance assessment (i.e., an assessment that requires students to demonstrate mastery by performing or producing something)

    End-of-unit or end-of-course project or presentation

    End-of-unit or end-of-course paper

    End-of-unit or end-of-course exam

    Student self-assessment

    Student portfolio (i.e., a purposeful collection of student work that tells a story of students' work, progress, and achievement over a period of time)

    Peer assessment

Personalized assessment opportunities		3.34	0.99	0.65

Please estimate the number of classes you teach for which the following statements about your instruction are true.

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
	Students demonstrate their learning in more than one way to show they are ready to move on to a new topic			
	When students do poorly on their assignment or activity on the first try, they try again later			
Competency-based instruction		4.33	0.75	0.91

For the standards or competencies to which instructional staff are expected to align their instruction, to what extent is each of the following statements true for courses at your school?

    Instructional staff know what the standards/competencies are for the courses they teach

    Instructional staff provide students with a set of course standards/competencies at the start of a course

    Instructors' daily learning objectives are aligned to standards/competencies

    Learning materials used by instructors are aligned to standards/competencies

    Activities and assignments students work on are aligned to standards/competencies

    Course assessments are aligned to standards/competencies

Scale Name		Mean	SD	Alpha
Mastery-based learning		2.89	0.91	0.83

Please estimate in how many courses you would actually see the following practices if you walked into your high school's classrooms or other learning environments today.

    Students must demonstrate they have learned a topic before they can move on to a new topic

    Students demonstrate they have learned a skill or topic as soon as they are ready

    Students can skip some topics or assignments within a course if they can demonstrate they know the material

    Instructors identify students' prior knowledge and skills with a diagnostic test or assessment before starting a new topic or competency

    Students receive additional supports to help them catch up to or keep the same learning pace as their peers

Scale Name		Mean	SD	Alpha
Nonmastery-based learning		3.97	1.01	0.69

Please estimate in how many courses you would actually see the following practices if you walked into your high school's classrooms or other learning environments today.

    Students are required to get through a certain amount of material, even if they are working at their own pace

    All students take tests and assessments at the same time

Scale Name		Mean	SD	Alpha
Nontraditional coursework		3.04	0.64	0.60

Please indicate whether your school offers opportunities for high school students to participate in the activities listed below and whether those opportunities are available for credit.

    Courses at another high school, either online or in person

    College courses, either online or in person

    Other online courses

    Learning experiences or courses at a community organization

    Independent study (e.g., writing a play or building a website) or projects students design themselves

    Projects outside of school that combine what students have learned in multiple courses

Scale Name		Mean	SD	Alpha
Learning experiences outside of school		3.24	0.93	0.67

Please indicate whether students in your high school have had the opportunity to participate in the activities listed below and whether these opportunities are available for credit.

    Community service projects, volunteer activities, or service learning project

    Jobs or internships

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	**SD**	**Alpha**
	College visits			
	Field trips and other experiences that connect what students are learning in school to real life			
Real-world relevancy		2.94	0.88	0.90

Please estimate the number of courses at your high school for which the following statements are true.

- Students can earn credit for learning they do in activities outside of the classroom or school, such as those in a community-based organization
- Students discuss the skills they have learned
- Students connect what they are learning to life outside of school (e.g., calculating how much it will cost to pay off student loans based on set salary and interest rate)
- Students connect what they learn outside of school (e.g., in an internship or college course) with what they learn in school
- Students develop real-world products (i.e., for authentic audiences and purposes) that are valued by people outside of the classroom (e.g., writing a letter to Congress, prototyping an exhibit for a local museum, developing a resume for a job)
- Curricula help students apply what they have learned to real-world contexts and situations

Scale Name		Mean	SD	Alpha
Instruction in socioemotional competencies*		2.39	0.47	0.94

Please indicate which of the following skills are formally included as part of your district and/or high schools' curriculum and/or encouraged by district or school leaders.

- Collaborating with other students on a variety of learning activities or assignments
- Understanding and managing emotions
- Handling stress
- Persisting through challenging activities or assignments
- Making responsible decisions
- Establishing and maintaining positive relationships
- Feeling and showing empathy for others
- Developing positive learning mindsets (e.g., growth mindset, sense of purpose, and belonging)
- Communicating their thoughts and emotions clearly and appropriately
- Developing a sense of positive identity

Scale Name		Mean	SD	Alpha
Student progress monitoring		4.36	0.80	0.71

Please estimate the number of courses at your high school for which the following statements are true.

- Instructors help students check their progress at least a few times a year
- Students can check their progress whenever they want, without checking in with the instructor
- Students are expected to monitor their own progress at least a few times a year (e.g., by using an online gradebook or portfolio)

Scale Name		Mean	SD	Alpha
Review of academic data		3.06	0.78	0.74

In general, how frequently do you review the following types of information about the performance of students or instruction in your high school?

- Summative or formative information about student performance on specific skills
- Assessment data that is built into curriculum software
- Information about specific students who need extra assistance

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
	Information about specific students who are progressing at the expected pace			
	Information about specific students who are at risk of dropping out or not making sufficient progress			
Review of nonacademic data		2.69	0.90	0.90

In general, how frequently do you review the following types of information about the performance of students or instruction in your high school?

Information about students' needs, interests, learning pace, and goals from parents/guardians

Information about students' needs, learning pace, and learning processes from students

Information about students' work habits and skills

Information from students about their interests and goals

Feedback from students on instruction and/or learning climate

Scale Name	Question and Items Included in Scale	Mean	SD	Alpha
Discuss academic data		2.86	0.81	0.84

In general, how frequently do you discuss the following types of information about student performance with district leaders, school leaders and/or instructional staff (either one-to-one or in a group setting)?

Summative student scores on district or state assessments

Summative or formative information about student performance on specific skills

Information about specific students who need extra assistance

Information about specific students who are progressing at the expected pace

Information about specific students who are at risk of dropping out or not making sufficient progress

Scale Name	Question and Items Included in Scale	Mean	SD	Alpha
Discuss nonacademic data		2.50	0.84	0.91

In general, how frequently do you discuss the following types of information about student performance with district leaders, school leaders and/or instructional staff (either one-to-one or in a group setting)?

Information about students' needs, interests, learning pace, and goals from parents/guardians

Information about student needs, learning pace, and learning processes from students

Information about student work habits and study skills

Information from students about their interests and goals

Feedback from students on instruction and/or learning climate

Scale Name	Question and Items Included in Scale	Mean	SD	Alpha
Instructional staff use of data		2.54	0.94	0.90

How frequently are instructional staff in your high school using student achievement data for each of the following purposes?

Tailor the content of instruction to individual students' needs, interests, and/or pace

Develop recommendations for tutoring or other educational support services for particular students

Group students within their class(es)

Offer students extended learning opportunities (e.g., extended-day programs, Saturday classes, or an extended school year)

Assess students' prior knowledge and skills to facilitate students' connection to new material and skill development

Set expectations/goals for student achievement

Monitor individual students' progress and understanding of key concepts

Reflect on and discuss learning with their students

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
Collaborative decisionmaking		4.17	0.98	0.84

Please indicate how frequently the following activities to take place at your school.

> School leaders work with instructional staff to establish, revise, and/or discuss progress toward school goals

> Students provide input on school goals

> School leaders solicit instructional staff input in issues related to curriculum, instruction, and improving student performance

> Instructional staff participate in school-level instructional decisionmaking through formal groups/structures

> Students participate in school-level decisions that could affect them through formal groups/structures

> Community members and/or parents participate in school-level decisions that could affect students through formal groups/structures

SCL mission		3.27	0.63	0.76

Please indicate the extent to which you agree with the following statements about your high school.

> My high school has a mission statement that supports student-centered learning

> If instructional staff were asked to describe the school's mission, most would be able to describe the mission clearly

SCL-focused professional learning		2.91	0.61	0.87

Please indicate the extent to which you agree or disagree with the following statements about PD provided by your district or school for high school leaders and instructional staff.

> My school and/or district provides instructional staff with many PD opportunities focused on student-centered learning

> All instructional staff have access to the same PD opportunities related to student-centered learning in my school/district

> My school or district provides me with many PD opportunities focused on student-centered learning

> I receive the PD I need to support student-centered learning practices in my school.

High-quality professional learning and feedback		3.02	0.55	0.77

Please indicate the extent to which you agree or disagree with the following statements about PD provided by your district or school for high school leaders and instructional staff.

> The PD provided by my school/district requires instructional staff to be active participants in their own learning.

> The PD provided by my school/district includes coaching or other supports to help instructional staff apply what they have learned to their instruction.

> The PD provided by my school/district is responsive to instructional staff's needs, interests, and learning pace.

> I provide all instructors with feedback on their instruction at least once a year.

> Other staff at this school provide all instructors with feedback on their instruction at least once a year.

Standards and competencies support SCL		2.31	0.48	0.89

Please indicate whether the following standards, materials, and assessments in high schools facilitate or support a focus on student-centered learning.

> High school standards for mathematics

> High school standards for English language arts

> High school standards for science

> High school standards for social studies

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
	High school standards for the arts			
	High school standards for foreign languages			
	High school standards for career or technical education			
	Schoolwide competencies			
Materials and assessments support SCL		2.08	0.54	0.89

Please indicate whether the following standards, materials, and assessments in high schools facilitate or support a focus on student-centered learning.

    District-required or recommended instructional materials for high school mathematics

    District-required or recommended instructional materials for high school English language arts

    District-required or recommended instructional materials for high school science

    District-required or recommended instructional materials for high school social studies

    Statewide high school assessments

Scale Name		Mean	SD	Alpha
Leaders support for mastery		4.08	0.99	0.86

Please estimate in how many high school courses you would ideally like to see the following practices (regardless of the number of courses in which the practice currently occurs).

    Students are required to demonstrate they have learned a topic before they can move on to a new topic

    Students must/can demonstrate they have learned a skill or topic as soon as they are ready

    Students can skip some topics or assignments within a course if they can demonstrate they know the material

    Students receive additional supports to help them catch up to or keep the same learning pace as their peers

Scale Name		Mean	SD	Alpha
Leaders support for nonmastery		3.02	1.11	0.54

Please estimate in how many high school courses you would ideally like to see the following practices (regardless of the number of courses in which the practice currently occurs).

    Students are required to get through a certain amount of material, even if they are working at their own pace

    All students take tests and assessments at the same time

Scale Name		Mean	SD	Alpha
Inadequate supports for SCL in school		1.72	0.48	0.75

Please indicate whether the following conditions exist in your high school and the degree to which each is an obstacle to efforts to promote student-centered learning.

    An inadequate amount of time to prepare personalized lessons for all students

    School facilities and design do not support student-centered learning

    Instructional staff do not embrace student-centered learning

    Other district leaders do not embrace student-centered learning

    Other school leaders do not embrace student-centered learning

    Lack of access to high-quality content or learning materials across all courses

    Lack of student-centered instruction across all courses

    Lack of supports for high-needs students (e.g., students with more learning needs)

    Inadequate data to help instructional staff personalize instruction for students

Scale Name		Mean	SD	Alpha
Inadequate technological supports		1.52	0.62	0.86

Please indicate whether the following conditions exist in your high school and the degree to which each is an obstacle to efforts to promote student-centered learning.

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
	Inadequate number of computers or other devices (e.g., tablets) to accommodate all students			
	Slow internet connection or inadequate bandwidth in the school			
	Lack of reliable internet access outside of school for students			
	Computer-based instruction and school curriculum are not aligned			
	Online learning programs do not allow instructional staff to assign specific activities or units to individual students			
Inflexibility of current structures/supports		1.85	0.54	0.63

Please indicate whether the following conditions exist in your high school and the degree to which each is an obstacle to efforts to promote student-centered learning.

    Lack of flexibility in the curriculum instructors are required to teach (i.e., need to teach specific material in a specific time frame)

    Pressure to cover specific material on which students will be tested

    Tracking students into prespecified pathways or sets of courses

    Instructional staff are expected to serve too many students in some courses

    Poor alignment between state policy requirements and student-centered learning

    Inadequate state data systems

NOTES: SD = standard deviation.
* = Scales did not function well based on CFA results. We do not recommend using these scales. However, the items from these scales may be used in single-item analysis.

Table B.4. District Leader Survey Scales

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
Student choice		2.70	0.83	0.92

Please estimate how many courses there are at your high school(s) in which you would see students typically making the following choices on a regular basis.

Students choose what learning materials (e.g., books, computer software) they use

Students choose how they learn content (e.g., group work, independent work, online research)

Students choose what topics or skills they focus on

Students choose the order in which they complete assignments and activities

Students make choices based on their interest

Students make choices based on their individual learning needs

Students choose how to demonstrate what they have learned (e.g., through projects, presentations, performances, or models, as well as traditional tests or papers)

Flexible credit options		2.36	1.13	0.90

Please indicate whether your district allows each of the following, as well as whether high school students do this.

Skip required courses if they show they have learned the material (e.g., students who demonstrate knowledge and skills for Algebra I can take the next level of math)

Skip seat time for parts of a course (e.g., units or topics) if they show they have learned the material

Receive credit for a course at any point in the year if they show they have learned the material

Receive credit for a course or learning opportunity they have designed themselves

Adjust their schedules (e.g., length of classes, order of classes) monthly or more frequently to address their needs, interests, and pace

Take alternative routes to earning credits beyond seat time (e.g., project based on established rubrics or online badges earned)

Take blended courses that involve some online instruction and some in-person instruction in a traditional classroom setting

Personalized assessment opportunities		3.17	0.95	0.64

Please estimate in how many high school courses you would actually see the following assessment practices if you walked into classrooms or other high school learning environments today.

Students demonstrate their learning in more than one way to show they are ready to move on to a new topic

When students do poorly on their assignment or activity on their first try, they try again later

Nontraditional coursework		2.99	0.64	0.71

Please indicate whether your district offers opportunities for high school students to participate in the activities listed below and whether those opportunities are available for credit.

Courses at another high school, either online or in person

College courses, either online or in person

Other online courses

Learning experiences or courses at a community organization

Independent studies (e.g., writing a play or building a website) or projects that students design themselves

Projects outside of school that combine what students have learned in multiple courses

		Descriptives		
Scale Name	Question and Items Included in Scale	Mean	SD	Alpha
Learning experiences outside of school		3.19	0.97	0.73

Please indicate whether your district offers opportunities for high school students to participate in the activities listed below and whether those opportunities are available for credit.

- Community service projects, volunteer activities, or service learning project
- Jobs or internships
- College visits
- Field trips and other experiences that connect what students are learning in school to real life

Instruction in socioemotional competencies		2.53	0.49	0.93

Please indicate which of the following skills are formally included as part of your district and/or high schools' curriculum and/or encouraged by district or school leaders.

- Collaborating with other students on a variety of activities or assignments
- Understanding and managing emotions
- Handling stress
- Persisting through challenging activities or assignments
- Making responsible decisions
- Establishing and maintaining positive relationships
- Feeling and showing empathy for others
- Developing positive learning mindsets (e.g., growth mindset, sense of purpose, and belonging)
- Communicating their thoughts and emotions clearly and appropriately
- Developing a sense of positive identity

Review of academic data		2.74	0.92	0.87

In general, how frequently do you review the following types of information about the performance of students or instruction in your high school(s)?

- Summative or formative information about student performance on specific skills
- Assessment data that is built into curriculum software
- Information about specific students who need extra assistance
- Information about specific students who are progressing at the expected pace
- Information about specific students who are at risk of dropping out or not making sufficient progress

Review of nonacademic data		2.31	0.97	0.94

In general, how frequently do you review the following types of information about the performance of students or instruction in your high school(s)?

- Information about students' needs, interests, learning pace, and goals from parents or guardians
- Information about students' needs, learning pace, and learning processes from students
- Information about students' work habits and skills
- Information from students about their interests and goals
- Feedback from students on instruction and/or learning climate

Discuss academic data		2.73	0.91	0.92

In general, how frequently do you discuss the following types of information about student performance with school leaders and/or instructional staff (either one-to-one or in a group setting)?

		Descriptives		
Scale Name	**Question and Items Included in Scale**	**Mean**	**SD**	**Alpha**
	Summative student scores on district or state assessments			
	Summative or formative information about student performance on specific skills			
	Information about specific students who need extra assistance			
	Information about specific students who are progressing at the expected pace			
	Information about specific students who are at risk of dropping out or not making sufficient progress			
Discuss nonacademic data		2.23	0.95	0.96

In general, how frequently do you discuss the following types of information about student performance with school leaders and/or instructional staff (either one-to-one or in a group setting)?

Information about students' needs, interests, learning pace, and goals from parents/guardians

Information about student needs, learning pace, and learning processes from students

Information about student work habits and study skills

Information from students about their interests and goals

Feedback from students on instruction and/or learning climate

Collaborative decisionmaking		4.04	1.07	0.86

Please indicate how frequently the following activities take place at high schools in your district.

School leaders work with instructional staff to establish, revise, and/or discuss progress toward school goals

Students provide input on school goals

School leaders solicit instructional staffs' input in issues related to curriculum, instruction, and improving student performance

Instructional staff participate in school-level instructional decisionmaking through formal groups/structures (e.g., curriculum committee, school improvement teams)

Students participate in school-level decisions that could affect them through formal groups/structures

Community members and/or parents participate in school-level decisions that could affect students through formal groups/structures

SCL-focused professional learning		3.20	0.59	0.83

Please indicate the extent to which you agree or disagree with the following statements about PD provided by your district for high school leaders and instructional staff.

My district provides instructional staff with many PD opportunities focused on student-centered learning

My district provides school leaders with many PD opportunities focused on student-centered learning

All instructional staff have access to the same PD opportunities related to student-centered learning in my district

High-quality professional learning		3.16	0.63	0.83

Please indicate the extent to which you agree or disagree with the following statements about PD provided by your district for high school leaders and instructional staff.

The PD provided by my district requires instructional staff to be active participants in their own learning

The PD provided by my district includes coaching or other supports to help instructional staff apply what they have learned to their instruction

The PD provided by my district is responsive to instructional staff's needs, interests, and learning pace

Standards and competencies support SCL		2.25	0.46	0.87

Please indicate whether the following standards, materials, and assessments in high schools facilitate or support a

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
	focus on student-centered learning.			
	High school standards for mathematics			
	High school standards for English language arts			
	High school standards for science			
	High school standards for social studies			
	High school standards for the arts			
	High school standards for foreign languages			
	High school standards for career or technical education			
	Schoolwide competencies			
Materials and assessments support SCL		2.11	0.46	0.84
	Please indicate whether the following standards, materials, and assessments in high schools facilitate or support a focus on student-centered learning.			
	District-required or recommended instructional materials for high school mathematics			
	District-required or recommended instructional materials for high school English language arts			
	District-required or recommended instructional materials for high school science			
	District-required or recommended instructional materials for high school social studies			
	Statewide high school assessments			
Leaders support for mastery		4.46	0.65	0.77
	Please estimate in how many high school courses you would ideally like to see the following practices (regardless of the number of courses in which the practice currently occurs).			
	Students are required to demonstrate they have learned a topic before they can move on to a new topic			
	Students must/can demonstrate they have learned a skill or topic as soon as they are ready			
	Students can skip some topics or assignments within a course if they can demonstrate they know the material			
	Students receive additional supports to help them catch up to or keep the same learning pace as their peers			
Leaders support for nonmastery		3.05	1.14	0.57
	Please estimate in how many high school courses you would ideally like to see the following practices (regardless of the number of courses in which the practice currently occurs).			
	Students are required to get through a certain amount of material, even if they are working at their own pace			
	All students take tests and assessments at the same time			
Inadequate supports for SCL in school		2.37	0.63	0.77
	Please indicate whether the following conditions exist at high schools in your district and the degree to which each is an obstacle to the district's efforts to promote student-centered learning.			
	An inadequate amount of time to prepare personalized lessons for all students			
	School facilities and design do not support student-centered learning			
	Instructional staff do not embrace student-centered learning			
	Other district leaders do not embrace student-centered learning			
	School leaders do not embrace student-centered learning			
	Lack of access to high-quality content or learning materials across all courses			

Scale Name	Question and Items Included in Scale	Descriptives		
		Mean	SD	Alpha
	Lack of student-centered instruction across all courses			
	Lack of supports for high-needs students (e.g., students with more learning needs)			
	Inadequate data to help instructional staff personalize instruction for students			
Inadequate technological supports		1.71	0.75	0.86

Please indicate whether the following conditions exist at high schools in your district and the degree to which each is an obstacle to the district's efforts to promote student-centered learning.

Inadequate number of computers or other devices (e.g., tablets) to accommodate all students

Slow internet connection or inadequate bandwidth in the school

Lack of reliable internet access outside of school for students

Computer-based instruction and school curriculum are not aligned

Online learning programs do not allow instructors to assign specific activities or units to individual students

Inflexibility of current structures/supports		2.44	0.70	0.77

Please indicate whether the following conditions exist at high schools in your district and the degree to which each is an obstacle to the district's efforts to promote student-centered learning.

Lack of flexibility in the curriculum instructors are required to teach (i.e., need to teach specific material in a specific time frame)

Pressure to cover specific material on which students will be tested

Tracking students into pre-specified pathways or sets of courses

Instructional staff are expected to serve too many students in some courses

Poor alignment between state policy requirements and student-centered learning

Inadequate state data systems

NOTE: SD = standard deviation.

Table B.5. Confirmatory Factor Analysis Model Fit for the Student Survey

	Descriptives			
	Chi-Square (df)	**RMSEA**	**CFI**	**SRMR**
Student survey				
Student choice	28.66 (9)	0.08	0.99	0.04
Tailored learning opportunities	10.89 (8)	0.03	1.00	0.03
Course credit based on mastery	—	—	—	—
Diverse learning opportunities	2.08 (2)	0.01	1.00	0.02
Personalization supports	172.77 (20)	0.15	0.98	0.09
Objectives shared	—	—	—	—
Mastery-based learning	14.51 (5)	0.07	1.00	0.04
Nonmastery-based learning	—	—	—	—
Engagement	—	—	—	—
High expectations	—	—	—	—
Nontraditional coursework	22.34 (9)	0.07	1.00	0.05
Learning experiences outside of school	2.00 (2)	0.00	1.00	0.02
Outside-of-school work	—	—	—	—
Real-world relevancy	276.71 (20)	0.20	0.99	0.09
Metacognitive strategies	278.73 (44)	0.13	0.99	0.07
Student engagement	4.81 (2)	0.07	1.00	0.03
Student agency	106.44 (9)	0.19	0.98	0.09
Instructor support (I)	6.58 (3)	0.06	1.00	0.03
Study habits	0.91 (2)	0.00	1.00	0.01
Progress monitoring	1.04 (2)	0.00	1.00	0.01
Discuss learning progress	—	—	—	—
Instructor support (II)	—	—	—	—
Collaborative decisionmaking	2.07 (2)	0.01	1.00	0.01
Technological supports	2.75 (2)	0.04	1.00	0.01
Instructor support (III)	—	—	—	—
Helpful feedback	75.87 (5)	0.22	0.99	0.05
Individual attention	0.84 (2)	0.00	1.00	0.01

NOTE: Dashes in cells mean data not available.

Table B.6. Confirmatory Factor Analysis Model Fit for the Instructional Staff Survey

	Descriptives			
	Chi-Square (df)	RMSEA	CFI	SRMR
Teacher survey				
Student choice	20.58 (14)	0.03	1.00	0.03
Personalized learning opportunities	—	—	—	—
Competency-based instruction	57.58 (9)	0.10	0.99	0.09
Mastery-based learning	25.34 (9)	0.06	1.00	0.04
Nonmastery-based learning	—	—	—	—
High-quality assessments	105.84 (9)	0.14	0.98	0.07
Meeting the needs of different students	62.40 (7)	0.12	0.96	0.08
Student-centered instructional practices	62.13 (9)	0.10	0.99	0.05
Nontraditional coursework	141.37 (9)	0.22	0.97	0.12
Learning experiences outside of school	8.23 (2)	0.08	1.00	0.03
Real-world relevancy	63.80 (9)	0.10	0.98	0.08
Socioemotional competencies	127.41 (35)	0.07	1.00	0.05
Metacognitive strategies	249.37 (54)	0.08	0.98	0.07
Student engagement	—	—	—	—
Student agency	11.14 (5)	0.05	1.00	0.03
Progress monitoring	—	—	—	—
Review of academic data	11.04 (5)	0.05	1.00	0.03
Review of nonacademic data	4.31 (5)	0.00	1.00	0.01
Instructor data use	35.89 (20)	0.05	0.99	0.05
Student data use	2.04 (2)	0.01	1.00	0.01
Collaborative decisionmaking	172.85 (9)	0.18	0.98	0.08
Instructor autonomy	—	—	—	—
SCL-focused professional learning	—	—	—	—
High-quality professional learning and feedback	—	—	—	—
Instructor guidance and responsiveness	48.40 (14)	0.07	0.99	0.05
Understanding student needs	—	—	—	—
Structural supports for SCL	557.57 (35)	0.19	0.96	0.12
Inadequate supports for SCL in school	55.79 (9)	0.10	0.99	0.06
Inadequate technological supports	66.43 (5)	0.15	0.95	0.08
Inflexibility of current structures	3.59 (5)	0.00	1.00	0.02

NOTE: Dashes in cells mean data not available.

Table B.7. Confirmatory Factor Analysis Model Fit for the School Leader Survey

	Descriptives			
	Chi-Square (df)	RMSEA	CFI	SRMR
School leader survey				
Student choice	56.36 (14)	0.17	0.85	0.06
Flexible credit options	15.38 (12)	0.06	0.97	0.06
Diverse summative assessment strategies	17.89 (8)	0.08	0.97	0.05
Personalized assessment opportunities	—	—	—	—
Competency-based instruction	19.03 (9)	0.12	0.98	0.03
Mastery-based learning	26.04 (5)	0.23	0.86	0.06
Nonmastery-based learning	—	—	—	—
Nontraditional coursework	10.94 (7)	0.08	0.95	0.06
Learning experiences outside of school	2.46 (2)	0.06	0.99	0.03
Real-world relevancy	13.73 (8)	0.10	0.98	0.03
Socioemotional competencies	105.22 (35)	0.14	0.84	0.05
Student progress monitoring	—	—	—	—
Review of academic data	16.81 (4)	0.18	0.92	0.07
Review of nonacademic data	8.59 (4)	0.10	0.99	0.03
Discuss academic data	7.8 (3)	0.10	0.99	0.02
Discuss nonacademic data	3.68 (5)	0.00	1.00	0.02
Instructional staff use of data	22.49 (13)	0.09	0.97	0.04
Collaborative decisionmaking	14.31 (8)	0.10	0.96	0.05
SCL mission	—	—	—	—
SCL-focused professional learning	5.14 (2)	0.14	0.98	0.03
High-quality professional learning and feedback	2.58 (5)	0.00	1.00	0.03
Standards and competencies support SCL	17.41 (20)	0.00	1.00	0.04
Materials and assessments support SCL	4.46 (5)	0.00	1.00	0.03
Leader support for mastery	8.00 (2)	0.18	0.97	0.03
Leader support for nonmastery	—	—	—	—
Inadequate supports for SCL in school	36.96 (27)	0.07	0.91	0.07
Inadequate technological supports	0.66 (4)	0.00	1.00	0.01
Inflexibility of current structures	5.89 (7)	0.00	1.00	0.04

NOTE: Dashes in cells mean data not available.

Table B.8. Regression Results of Models Predicting Student Outcomes

	Outcome	
	PSAT	**Suspension**
	Estimate (SE)	**Estimate (SE)**
Student choice	–37.88* (14.04)	–0.01 (0.02)
Tailored learning opportunities	–43.18* (17.41)	0.00 (0.02)
Course credit based on mastery	23.25 (33.29)	0.07* (0.04)
Diverse learning opportunities	–22.27 (14.16)	–0.04* (0.01)
Personalization supports	–28.61* (14.38)	–0.04* (0.02)
Objectives shared	0.20 (12.62)	–0.03* (0.01)
Mastery-based learning	–42.67* (13.77)	–0.01 (0.02)
Nonmastery-based learning	13.37 (13.88)	–0.04* (0.01)
Engagement	0.51 (12.66)	–0.02 (0.01)
High expectations	16.67 (11.69)	–0.03* (0.01)
Nontraditional coursework	–15.88 (26.94)	0.04 (0.03)
Learning experiences outside of school	2.75 (24.55)	–0.01 (0.02)
Outside-of-school work	–5.99 (13.95)	–0.03* (0.01)
Real-world relevancy	–10.67 (13.18)	–0.01 (0.01)
Metacognitive strategies	7.83 (15.25)	–0.03* (0.02)
Student engagement	–3.11 (13.52)	–0.02 (0.01)
Student agency	–10.02 (14.46)	–0.03 (0.01)
Instructor support (I)	3.11 (14.00)	–0.03 (0.01)
Study habits	0.00 (16.13)	–0.03 (0.02)
Progress monitoring	18.38 (12.82)	–0.04* (0.01)
Discuss learning progress	–20.10 (15.90)	–0.02 (0.01)
Instructor support (II)	–13.55 (12.98)	–0.02 (0.01)
Collaborative decisionmaking	–42.08* (18.90)	–0.05* (0.02)
Technological supports	–3.85 (20.17)	–0.04 (0.02)
Instructor support (III)	–16.86 (20.14)	–0.03 (0.02)
Helpful feedback	4.33 (15.00)	–0.02 (0.01)
Individual attention	–17.80 (20.65)	–0.06 (0.02)

NOTE: * = The estimate is statistically significant ($p < .05$).

Table B.9. Regression Results of Models Predicting Student Survey Scales

	FRL	Black	Hispanic/ Latino	Grade 10	Grade 11	Grade 12	School
	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)
Student choice	0.07 (0.16)	0.04 (0.18)	0.00 (0.15)	–0.21 (0.14)	–0.31* (0.14)	–0.20 (0.16)	0.62** (0.10)
Tailored learning opportunities	–0.07 (0.14)	–0.04 (0.16)	0.09 (0.13)	–0.05 (0.13)	0.04 (0.13)	0.02 (0.13)	0.58 (0.09)
Course credit based on mastery	0.15 (0.11)	0.44* (0.14)	–0.10 (0.12)	0.00 (0.11)	–0.33* (0.11)	–0.25* (0.12)	0.54* (0.08)
Diverse learning opportunities	–0.24 (0.16)	0.22 (0.19)	0.38* (0.15)	–0.18 (0.15)	–0.01 (0.15)	–0.18 (0.16)	0.31* (0.10)
Personalization supports	–0.29 (0.15)	–0.07 (0.18)	0.29* (0.15)	0.06 (0.14)	0.13 (0.14)	0.05 (0.15)	0.51* (0.10)
Objectives shared	–0.24 (0.19)	–0.09 (0.21)	0.21 (0.18)	0.04 (0.17)	0.17 (0.17)	–0.05 (0.18)	0.07 (0.12)
Mastery-based learning	–0.09 (0.17)	0.16 (0.18)	0.30 (0.16)	–0.25 (0.15)	–0.17 (0.15)	–0.41* (0.16)	0.95* (0.10)
Nonmastery-based learning	0.04 (0.18)	-0.12 (0.20)	-0.17 (0.17)	0.16 (0.16)	0.09 (0.16)	–0.07 (0.17)	–0.78* (0.11)
Engagement	0.04 (0.18)	0.09 (0.20)	0.24 (0.17)	–0.17 (0.17)	–0.02 (0.16)	0.00 (0.18)	–0.12 (0.12)
High expectations	–0.24 (0.20)	–0.14 (0.22)	–0.10 (0.19)	–0.01 (0.18)	0.07 (0.18)	0.10 (0.19)	–0.10 (0.12)
Nontraditional coursework	0.01 (0.09)	0.19 (0.11)	0.10 (0.09)	–0.01 (0.08)	0.14 (0.08)	0.27 (0.09)	0.23* (0.06)
Learning experiences outside of school	–0.06 (0.1)	0.16 (0.11)	0.10 (0.10)	–0.07 (0.09)	0.17* (0.09)	0.36* (0.09)	–0.15* (0.06)
Outside-of-school work	–0.05 (0.18)	0.16 (0.20)	0.18 (0.17)	–0.07 (0.15)	0.10 (0.15)	–0.31 (0.16)	–0.16 (0.11)
Real-world relevancy	0.00 (0.19)	0.34 (0.21)	0.37* (0.17)	–0.09 (0.17)	–0.03 (0.16)	0.06 (0.18)	0.43* (0.12)
Metacognitive strategies	0.13 (0.18)	0.51* (0.20)	0.23 (0.17)	–0.02 (0.16)	–0.10 (0.16)	–0.26 (0.17)	–0.05 (0.11)
Student engagement	–0.21 (0.19)	0.07 (0.21)	0.22 (0.18)	–0.06 (0.17)	–0.09 (0.17)	–0.11 (0.18)	0.15 (0.12)

	Characteristic						
	FRL	**Black**	**Hispanic/ Latino**	**Grade 10**	**Grade 11**	**Grade 12**	**School**
	Estimate (SE)	**Estimate (SE)**	**Estimate (SE)**	**Estimate (SE)**	**Estimate (SE)**	**Estimate (SE)**	**Estimate (SE)**
Student agency	−0.12 (0.19)	0.24 (0.20)	0.34 (0.17)	0.03 (0.17)	0.02 (0.16)	−0.06 (0.18)	0.35* (0.11)
Instructor support (I)	−0.26 (0.18)	0.06 (0.20)	0.08 (0.17)	−0.08 (0.16)	−0.15 (0.16)	−0.22 (0.17)	0.35* (0.11)
Study habits	−0.16 (0.16)	0.01 (0.17)	0.17 (0.15)	0.06 (0.14)	−0.01 (0.14)	−0.09 (0.15)	−0.07 (0.10)
Progress monitoring	−0.09 (0.22)	0.05 (0.24)	−0.04 (0.20)	0.13 (0.19)	0.18 (0.19)	−0.22 (0.20)	−0.20 (0.13)
Discuss learning progress	−0.19 (0.17)	−0.03 (0.19)	0.12 (0.16)	0.18 (0.15)	0.27 (0.15)	0.05 (0.16)	0.20 (0.11)
Instructor support (II)	−0.04 (0.21)	0.23 (0.23)	0.35 (0.19)	−0.05 (0.18)	0.14 (0.18)	−0.35 (0.19)	0.33* (0.13)
Collaborative decisionmaking	−0.07 (0.14)	0.04 (0.15)	0.08 (0.13)	−0.06 (0.12)	−0.01 (0.12)	−0.25 (0.13)	0.08 (0.08)
Technological supports	−0.12 (0.14)	−0.01 (0.15)	−0.07 (0.12)	0.08 (0.12)	0.05 (0.12)	−0.11 (0.13)	−0.10 (0.08)
Instructor support (III)	−0.10 (0.13)	0.02 (0.14)	0.08 (0.12)	−0.02 (0.11)	0.01 (0.11)	−0.12 (0.12)	−0.10 (0.08)
Helpful feedback	−0.07 (0.20)	0.12 (0.21)	0.11 (0.18)	0.04 (0.17)	0.01 (0.16)	−0.07 (0.18)	0.17 (0.12)
Individual attention	−0.19 (0.13)	0.16 (0.14)	0.22 (0.12)	-0.02 (0.12)	0.08 (0.11)	−0.06 (0.12)	0.05 (0.08)

NOTE: * = The estimate is statistically significant ($p < .05$).

Table B.10. Regression Results of Models Predicting Instructional Staff Survey Scales

	Characteristic		
	Title I	**Black or Hispanic**	**School**
	Estimate (SE)	**Estimate (SE)**	**Estimate (SE)**
Student choice	–0.16 (0.11)	–0.23 (0.17)	–0.60 (0.48)
Personalized learning opportunities	0.09 (0.12)	0.15 (0.19)	0.48 (0.28)
Competency-based instruction	0.01 (0.06)	0.25* (0.10)	0.22 (0.21)
Mastery-based learning	0.03 (0.08)	0.14 (0.13)	0.60* (0.25)
Nonmastery-based learning	–0.05 (0.07)	0.07 (0.12)	–0.37 (0.29)
High-quality assessments	–0.07 (0.08)	0.12 (0.13)	–0.31 (0.33)
Meeting the needs of different students	0.13* (0.06)	0.25* (0.10)	0.72* (0.24)
Student-centered instructional practices	–0.03 (0.08)	0.23 (0.13)	0.33 (0.26)
Nontraditional coursework	–0.08 (0.13)	0.01 (0.20)	0.04 (0.54)
Learning experiences outside of school	–0.07 (0.10)	0.11 (0.17)	–0.39 (0.49)
Real-world relevancy	–0.07 (0.09)	0.03 (0.14)	–0.14 (0.30)
Socioemotional competencies	–0.02 (0.05)	0.05 (0.07)	0.08 (0.16)
Metacognitive strategies	0.03 (0.06)	0.25* (0.09)	0.26 (0.22)
Student engagement	–0.02 (0.08)	–0.11 (0.12)	–0.20 (0.28)
Student agency	–0.02 (0.09)	–0.10 (0.14)	–0.05 (0.34)
Progress monitoring	0.02 (0.05)	0.03 (0.08)	0.50* (0.14)
Review of academic data	0.17* (0.08)	0.18 (0.13)	1.37* (0.27)
Review of nonacademic data	0.06 (0.09)	0.19 (0.14)	0.98* (0.31)
Instructor data use	0.12 (0.08)	0.23 (0.12)	1.08* (0.35)
Student data use	0.11 (0.10)	0.19 (0.16)	1.16* (0.24)
Collaborative decisionmaking	–0.22* (0.11)	0.08 (0.17)	0.08 (0.39)
Instructor autonomy	–0.12* (0.06)	–0.26* (0.10)	0.09 (0.22)
SCL-focused professional learning	–0.05 (0.06)	0.01 (0.10)	0.18 (0.22)
High-quality professional learning and feedback	0.04 (0.06)	–0.03 (0.09)	0.13 (0.23)
Instructor guidance and responsiveness	–0.10* (0.05)	–0.02 (0.08)	0.22 (0.20)
Understanding student needs	0.02 (0.04)	0.07 (0.07)	0.56* (0.22)
Structural supports for SCL	–0.07 (0.06)	–0.16 (0.09)	0.37 (0.19)
Inadequate supports for SCL in school	0.11 (0.07)	0.28* (0.11)	–0.59* (0.24)
Inadequate technological supports	0.09 (0.07)	0.25* (0.11)	–0.52* (0.22)
Inflexibility of current structures	0.13* (0.07)	0.32* (0.10)	–0.09 (0.27)

NOTE: * = The estimate is statistically significant ($p < .05$).

Table B.11. Regression Results of Models Predicting School Leader Survey Scales

	Characteristic	
	Title I	Black or Hispanic
	Estimate (SE)	Estimate (SE)
School leader survey		
Flexible credit options	0.49* (0.18)	0.21 (0.28)
Diverse summative assessment strategies	–0.13 (0.16)	–0.14 (0.24)
Personalized assessment opportunities	0.10 (0.20)	–0.17 (0.33)
Competency-based instruction	0.28 (0.15)	–0.23 (0.26)
Mastery-based learning	0.43* (0.19)	0.24 (0.30)
Nonmastery-based learning	0.05 (0.21)	0.01 (0.33)
Nontraditional coursework	0.13 (0.14)	–0.14 (0.22)
Learning experiences outside of school	–0.46* (0.19)	–0.11 (0.31)
Real-world relevancy	–0.02 (0.19)	–0.31 (0.29)
Student progress monitoring	0.18 (0.17)	–0.07 (0.28)
Review of academic data	0.09 (0.17)	0.14 (0.27)
Review of nonacademic data	–0.01 (0.20)	0.52 (0.31)
Discuss academic data	0.07 (0.17)	0.09 (0.27)
Discuss nonacademic data	0.02 (0.19)	0.25 (0.30)
Instructional staff use of data	0.30 (0.23)	0.60 (0.33)
Collaborative decisionmaking	-0.05 (0.22)	–0.47 (0.35)
SCL mission	0.14 (0.14)	–0.01 (0.22)
SCL-focused professional learning	–0.12 (0.13)	–0.07 (0.22)
High-quality professional learning and feedback	–0.15 (0.12)	–0.16 (0.19)
Standards and competencies support SCL	–0.14 (0.11)	0.03 (0.19)
Materials and assessments support SCL	–0.09 (0.12)	0.25 (0.20)
Leader support for mastery	0.29 (0.21)	0.26 (0.34)
Leader support for nonmastery	0.06 (0.24)	0.12 (0.38)
Inadequate supports for SCL in school	–0.12 (0.11)	0.32 (0.17)
Inadequate technological supports	0.06 (0.14)	0.18 (0.22)
Inflexibility of current structures	–0.04 (0.11)	0.21 (0.18)

NOTE: * = The estimate is statistically significant ($p < .05$).

Table B.12. Correlations Among Student Survey Scales

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.
1.	Student choice	1.0																										
2.	Tailored learning	0.7	1.0																									
3.	Course credit	0.2	0.3	1.0																								
4.	Diverse learning	0.5	0.5	0.1	1.0																							
5.	Personalization	0.5	0.6	0.2	0.7	1.0																						
6.	Objectives shared	0.3	0.4	0.1	0.5	0.5	1.0																					
7.	Mastery	0.5	0.5	0.3	0.4	0.6	0.3	1.0																				
8.	Nonmastery	0.0	0.0	-0.1	0.2	0.2	0.3	0.0	1.0																			
9.	Engagement	0.3	0.4	0.0	0.5	0.5	0.5	0.3	0.4	1.0																		
10.	High expectations	0.2	0.3	-0.1	0.4	0.3	0.4	0.2	0.4	0.6	1.0																	
11.	Nontraditional	0.2	0.2	0.2	0.1	0.2	0.1	0.3	0.0	0.1	0.0	1.0																
12.	Learning	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7	1.0															
13.	Outside of school	0.1	0.1	0.0	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.2	0.2	1.0														
14.	Real world	0.4	0.5	0.2	0.4	0.5	0.4	0.5	0.1	0.4	0.2	0.4	0.3	0.4	1.0													
15.	Metacognitive	0.3	0.4	0.1	0.5	0.5	0.5	0.4	0.3	0.5	0.3	0.2	0.2	0.4	0.6	1.0												
16.	Student engagement	0.3	0.4	0.1	0.4	0.4	0.4	0.4	0.2	0.5	0.3	0.3	0.3	0.5	0.6	0.6	1.0											
17.	Student agency	0.4	0.5	0.1	0.5	0.5	0.4	0.5	0.1	0.5	0.3	0.3	0.3	0.4	0.6	0.7	0.8	1.0										
18.	Instructor support (I)	0.3	0.4	0.1	0.5	0.5	0.5	0.4	0.1	0.4	0.4	0.1	0.1	0.3	0.4	0.6	0.6	0.6	1.0									
19.	Study habits	0.2	0.3	0.0	0.3	0.3	0.4	0.1	0.3	0.5	0.3	0.1	0.1	0.4	0.4	0.5	0.5	0.4	0.5	1.0								
20.	Progress monitoring	0.1	0.1	-0.1	0.3	0.3	0.4	0.1	0.4	0.4	0.4	0.0	0.1	0.4	0.3	0.5	0.4	0.4	0.5	0.5	1.0							
21.	Discuss learning	0.2	0.3	0.1	0.3	0.3	0.2	0.3	0.1	0.2	0.2	0.3	0.2	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	1.0						
22.	Instructor support (II)	0.3	0.4	0.1	0.4	0.5	0.5	0.4	0.2	0.4	0.3	0.2	0.1	0.4	0.5	0.6	0.5	0.6	0.6	0.5	0.5	0.6	1.0					
23.	Collaborative	0.3	0.4	0.0	0.4	0.4	0.4	0.2	0.2	0.5	0.3	0.1	0.1	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.5	1.0				
24.	Technological	0.2	0.2	-0.1	0.3	0.2	0.4	0.0	0.3	0.4	0.4	-0.1	0.1	0.3	0.2	0.4	0.4	0.3	0.4	0.5	0.6	0.2	0.4	0.6	1.0			
25.	Instructor support (III)	0.3	0.3	0.0	0.4	0.4	0.4	0.2	0.3	0.5	0.4	0.1	0.2	0.4	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.8	0.7	1.0		
26.	Helpful feedback	0.3	0.4	0.1	0.5	0.5	0.5	0.3	0.3	0.5	0.4	0.1	0.1	0.3	0.4	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.6	0.7	0.6	0.7	1.0	
27.	Individual attention	0.3	0.3	-0.1	0.4	0.4	0.4	0.2	0.2	0.4	0.4	0.1	0.1	0.3	0.3	0.5	0.5	0.5	0.6	0.5	0.5	0.4	0.5	0.7	0.6	0.8	0.7	1.0

Table B.13. Correlations Among Instructional Staff Survey Scales

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.
1. Student choice	1.0																													
2. Personalized learning opportunities	0.6	1.0																												
3. Competency-based instruction	0.1	0.1	1.0																											
4. Mastery-based learning	0.5	0.4	0.1	1.0																										
5. Nonmastery-based learning	-0.3	-0.3	0.1	-0.5	1.0																									
6. High-quality assessments	0.4	0.3	0.3	0.4	0.0	1.0																								
7. Meeting needs of different students	0.1	0.2	0.2	0.2	0.0	0.2	1.0																							
8. Student-centered instructional practices	0.4	0.3	0.2	0.4	-0.1	0.6	0.2	1.0																						
9. Nontraditional coursework	0.2	0.2	0.1	0.2	0.0	0.2	0.2	0.1	1.0																					
10. Learning experiences outside of school	0.2	0.2	0.0	0.2	0.0	0.1	0.1	0.1	0.6	1.0																				
11. Real-world relevancy	0.3	0.3	0.2	0.4	-0.1	0.5	0.3	0.4	0.2	0.2	1.0																			
12. Socioemotional competencies	0.1	0.1	0.0	0.2	0.0	0.1	0.1	0.1	0.2	0.2	0.2	1.0																		
13. Metacognitive skills	0.3	0.3	0.3	0.3	-0.1	0.4	0.2	0.5	0.1	0.1	0.3	0.1	1.0																	
14. Student engagement	0.2	0.2	0.1	0.3	-0.1	0.3	0.3	0.3	0.2	0.1	0.4	0.2	0.3	1.0																
15. Student agency	0.4	0.4	0.1	0.5	-0.3	0.4	0.3	0.4	0.2	0.2	0.5	0.2	0.4	0.6	1.0															

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.
16. Progress monitoring	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	1.0														
17. Review of academic data	0.2	0.2	0.1	0.4	-0.2	0.1	0.2	0.3	0.1	0.1	0.2	0.2	0.3	0.2	0.4	0.2	1.0													
18. Review of nonacademic data	0.3	0.3	0.1	0.5	-0.3	0.3	0.2	0.4	0.1	0.1	0.3	0.2	0.4	0.3	0.5	0.2	0.7	1.0												
19. Instructor data use	0.2	0.3	0.1	0.5	-0.3	0.2	0.2	0.4	0.1	0.1	0.2	0.2	0.4	0.2	0.3	0.1	0.5	0.6	1.0											
20. Student data use	0.3	0.2	0.2	0.5	-0.2	0.3	0.2	0.4	0.1	0.1	0.3	0.1	0.3	0.3	0.5	0.2	0.5	0.6	0.5	1.0										
21. Collaborative decisionmaking	0.1	0.2	0.0	0.2	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	1.0									
22. Instructor autonomy	0.1	0.1	0.1	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.5	1.0								
23. SCL-focused professional learning	0.1	0.1	0.1	0.2	-0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.5	1.0							
24. High-quality professional learning and feedback	0.1	0.1	0.1	0.1	-0.1	0.0	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.4	0.5	0.8	1.0						
25. Instructor guidance	0.1	0.1	0.1	0.2	0.0	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.3	0.1	0.2	0.2	0.2	0.1	0.4	0.6	0.4	0.4	1.0					
26. Understanding student needs	0.1	0.2	0.2	0.3	-0.1	0.2	0.2	0.3	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.4	0.3	0.3	0.3	0.2	0.3	0.4	0.3	0.4	1.0				
27. Structural supports for SCL	0.2	0.1	0.1	0.3	-0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.3	0.4	0.1	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.5	0.6	0.4	1.0			
28. Inadequate supports for SCL	-0.1	-0.1	-0.1	-0.2	0.1	0.0	-0.1	0.0	-0.2	-0.2	-0.1	-0.2	0.0	-0.1	-0.2	0.0	-0.2	-0.1	-0.1	-0.1	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3	-0.5	1.0		
29. Inadequate technological supports	-0.1	-0.2	-0.1	0.0	0.1	0.0	0.0	0.0	-0.1	-0.1	0.0	-0.1	0.0	-0.1	-0.1	0.0	-0.1	0.0	-0.1	0.0	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.3	0.6	1.0	
30. Inflexibility of current structures	-0.1	-0.1	0.0	-0.2	0.1	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	-0.2	0.0	-0.2	-0.2	0.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.3	0.6	0.5	1.0

Table B.14. Correlations Among School Leader Survey Scales

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.
1. Flexible credit options	1.0																									
2. Diverse sum. assessment	0.3	1.0																								
3. Personalized assessment	0.5	0.4	1.0																							
4. Competency-based instruction	0.2	0.4	0.4	1.0																						
5. Mastery-based instruction	0.7	0.4	0.7	0.5	1.0																					
6. Nonmastery	-0.3	0.0	-0.4	-0.1	-0.4	1.0																				
7. Nontraditional coursework	0.5	0.3	0.5	0.2	0.5	-0.3	1.0																			
8. Learning experience outside of school	0.2	0.2	0.3	0.1	0.2	-0.2	0.5	1.0																		
9. Real-world relevancy	0.5	0.5	0.6	0.3	0.7	-0.3	0.5	0.4	1.0																	
10. Student progress	0.3	0.2	0.3	0.5	0.4	0.0	0.2	0.1	0.3	1.0																
11. Academic data	0.5	0.4	0.4	0.3	0.5	-0.2	0.4	0.2	0.5	0.3	1.0															
12. Nonacademic data	0.4	0.2	0.4	0.1	0.5	-0.3	0.3	0.1	0.4	0.0	0.7	1.0														
13. Discuss academic data	0.3	0.3	0.2	0.2	0.4	-0.1	0.4	0.2	0.3	0.1	0.7	0.5	1.0													
14. Discuss nonacademic data	0.3	0.3	0.3	0.0	0.4	-0.2	0.3	0.3	0.5	0.1	0.5	0.6	0.7	1.0												
15. Instructor data use	0.4	0.3	0.4	0.4	0.4	-0.1	0.4	0.2	0.4	0.2	0.5	0.4	0.5	0.4	1.0											
16. Collaborative decisionmaking	0.2	0.4	0.3	0.2	0.3	0.0	0.4	0.3	0.5	0.1	0.4	0.3	0.4	0.4	0.3	1.0										
17. SCL mission	0.3	0.3	0.4	0.3	0.4	-0.2	0.4	0.2	0.4	0.3	0.4	0.3	0.4	0.3	0.5	0.3	1.0									
18. SCL-focused professional learning	0.2	0.3	0.4	0.5	0.5	-0.3	0.4	0.2	0.4	0.4	0.4	0.3	0.4	0.3	0.2	0.3	0.3	1.0								
19. Leader support for mastery	0.2	0.4	0.3	0.4	0.4	-0.2	0.3	0.1	0.4	0.3	0.4	0.2	0.4	0.4	0.2	0.4	0.3	0.8	1.0							
20. High-quality professional learning	0.0	0.1	0.2	0.4	0.2	-0.1	0.1	0.0	0.1	0.2	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.3	0.4	1.0						
21. Standards and competencies	0.1	0.1	0.1	0.3	0.2	-0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.2	0.2	0.0	0.1	0.4	0.3	0.6	1.0					
22. Materials and assessments	0.1	-0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	-0.2	-0.1	0.0	0.1	0.1	0.1	-0.1	-0.1	-0.1	-0.2	1.0				
23. Support for nonmastery	0.0	0.0	-0.1	0.2	0.0	0.2	0.0	-0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	-0.1	0.0	0.1	0.1	0.1	0.1	-0.1	1.0			
24. Inadequate support for SCL	-0.1	0.0	0.1	0.1	-0.1	-0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.1	0.1	0.0	0.1	-0.1	0.1	1.0		
25. Inadequate technological support	0.1	0.1	0.2	-0.1	0.1	-0.2	0.1	0.0	0.2	0.0	0.1	0.2	0.0	0.2	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.4	1.0	
26. Inflexibility	0.0	0.0	0.2	0.1	0.0	0.0	0.1	-0.1	0.1	0.0	0.1	0.1	-0.1	0.0	0.0	-0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.6	0.4	1.0

NOTE: sum. = summative

Table B.15. Correlations Among District Leader Survey Scales

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.
1. Student choice	1.0																			
2. Flexible credit options	0.8	1.0																		
3. Personalized assessment opportunities	0.6	0.6	1.0																	
4. Nontraditional coursework	0.6	0.6	0.3	1.0																
5. Learning experiences outside of school	0.3	0.3	0.2	0.5	1.0															
6. Instruction in socioemotional competencies	0.3	0.3	0.2	0.0	0.1	1.0														
7. Review of academic data	0.6	0.5	0.7	0.3	0.1	0.3	1.0													
8. Review of nonacademic data	0.5	0.5	0.5	0.3	0.0	0.3	0.8	1.0												
9. Discuss academic data	0.6	0.5	0.7	0.3	0.1	0.3	0.9	0.8	1.0											
10. Discuss nonacademic data	0.6	0.5	0.5	0.3	0.0	0.3	0.7	0.9	0.8	1.0										
11. Collaborative decisionmaking	0.5	0.4	0.4	0.4	0.3	0.4	0.6	0.5	0.6	0.5	1.0									
12. SCL-focused professional learning	0.2	0.1	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.4	1.0								
13. High-quality professional learning and feedback	0.3	0.3	0.4	0.3	0.3	0.1	0.3	0.2	0.4	0.3	0.5	0.7	1.0							
14. Standards and competencies support SCL	0.4	0.3	0.3	0.2	0.2	0.4	0.2	0.1	0.2	0.1	0.3	0.4	0.4	1.0						
15. Materials and assessments support SCL	0.5	0.3	0.4	0.3	0.1	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.7	1.0					
16. Leader support for mastery	0.1	0.1	0.1	-0.1	-0.3	-0.1	0.1	0.1	0.0	0.1	0.0	-0.2	-0.2	0.0	-0.2	1.0				
17. Leader support for nonmastery	0.1	0.1	-0.1	0.1	0.0	0.3	0.2	0.2	0.1	0.2	0.3	0.1	0.0	0.2	0.1	-0.1	1.0			
18. Inadequate supports for SCL in school	-0.5	-0.5	-0.4	-0.4	0.0	-0.2	-0.4	-0.3	-0.4	-0.3	-0.4	-0.4	-0.4	-0.4	-0.5	-0.2	-0.1	1.0		
19. Inadequate technological supports	-0.3	-0.2	-0.3	-0.2	-0.1	-0.3	-0.2	0.0	-0.2	-0.1	-0.1	-0.4	-0.3	-0.5	-0.4	-0.1	-0.1	0.6	1.0	
20. Inflexibility of current structures/context	-0.3	-0.4	-0.4	-0.3	0.0	-0.3	-0.4	-0.3	-0.4	-0.3	-0.3	-0.3	-0.3	-0.2	-0.4	0.0	-0.1	0.6	0.4	1.0

References

Bentler, Peter M., "Comparative Fit Indexes in Structural Models," *Psychological Bulletin*, Vol. 107, No. 2, 1990, p. 238.

———, *EQS 6 Structural Equations Program Manual*, Encino, Calif.: Multivariate Software, 1995.

Bollen, Kenneth A., *Structural Equations with Latent Variables*, Hoboken, N.J.: John Wiley and Sons, 1989.

Brown, Reagan D., and Neil M. A. Hauenstein, "Interrater Agreement Reconsidered: An Alternative to the rwg Indices," *Organizational Research Methods*, Vol. 8, No. 2, 2005, pp. 165–184.

Jöreskog, Karl G., "A General Approach to Confirmatory Maximum Likelihood Factor Analysis," *Psychometrika*, Vol. 34, No. 2, 1969, pp. 183–202.

Muthén, Bengt O., and David Kaplan, "A Comparison of Some Methodologies for the Factor Analysis of Non-Normal Likert Variables," *British Journal of Mathematical and Statistical Psychology*, Vol. 38, No. 2, 1985, pp. 171–189.

Muthén, Linda K., and Bengt O. Muthén, *Mplus User's Guide (1998–2012)*, Vol. 6, Los Angeles: Muthén and Muthén, 2012.

Rensvold, Roger B., and Gordon W. Cheung, "Testing Measurement Models for Factorial Invariance: A Systematic Approach," *Educational and Psychological Measurement*, Vol. 58, No. 6, 1998, pp. 1017–1034.

Steiger, James H., "Statistically Based Tests for the Number of Common Factors," Iowa City, Iowa: Psychometric Society, 1980.

Steiner, Elizabeth D., Julia H. Kaufman, Elaine Wang, Karen Christianson, Laura S. Hamilton, and A. Ramos, *Measuring Student-Centered Learning Toolkit: Literature and Tool Review*, Quincy, Mass.: Nellie Mae Education Foundation, undated.

Tomarken, Andrew J., and Niels G. Waller, "Potential Problems with 'Well Fitting' Models," *Journal of Abnormal Psychology*, Vol. 112, No. 4, 2003.