CALIFORNIA SAFE AND SUPPORTIVE SCHOOLS

Measurement Analysis of California School Climate, Health, and Learning Survey (Cal-SCHLS) for Staff

December 23, 2011

Healthy Kids School Climate
S U R V E Y S

Findings and recommendations

We conducted a series of factor analyses using items from the staff survey used in the California School Climate, Health, and Learning Survey System (Cal-SCHLS). The purpose of these analyses was to determine the measurement structure of items included on the 2010-11 staff surveys. We analyzed the items in Section 1, intended for all staff in schools, and the items in Section 2, targeted to staff with responsibilities for services or instruction related to health, prevention, discipline, counseling, and/or safety. The results of the analyses suggest that the items analyzed can be used to represent eight summary measures of school climate, student risk behavior, and health/prevention resources. Specifically, the following underlying factors are measured by the staff survey items analyzed:

Organizational Staff and Student Supports
- organizational supports (25 items)

Staff Supports
- staff relational supports (3 items)
- resource provision in the school (2 items)
- staff professional development needs (10 items)

Student Supports
- student supports (7 items)

Perceptions of Learning-Related Behavior
- student learning facilitative behavior (4 items)
- risk behavior, conflict, & disruptive behavior (13 items)

Health, Prevention, Discipline, & Safety Resources
- Health, prevention, discipline, & safety (18 items)

Each of the summary measures exhibits good internal consistency reliability, and each measure appears to represent a distinct dimension. The factor analyses also identified a latent factor for *stern discipline policies* (Section 2), but this two-item measure exhibited only moderate reliability.

This is the first formal analyses of items in Section 2 of the Cal-SCHLS staff survey that we know of. In general, the items included in Section 2 do not tap many distinct dimensions of health, prevention and safety resources. Rather, the items measure a global construct for health/prevention/safety resources and *stern discipline policies*. *Stern discipline policies* is measured by an item asking about the consistent use of out-of-school suspensions for first time substance use transgressions and zero tolerance policies. As noted above, the *stern discipline policies* measure does not exhibit adequate reliability.

Overall, the results suggest that the Cal-SCHLS staff survey items measure far fewer distinct constructs than intended. For example, the items that were intended to measure staff collegiality (q12, q13, q40, and q41), positive student learning environment (q6-q11), opportunities for meaningful participation (q16-q20), cultural sensitivity (q21-q25), clarity of discipline policies (q26-q28), and perceived school safety (q29, q30) measured a global organizational support construct. These more specific factors (e.g., meaningful participation), were too strongly correlated with each other to discriminate. We recommend that further work be done to determine how these summary measures can best be used to communicate the results to schools and school districts. Although the items on the staff survey appear to measure far fewer constructs than intended, the items address a variety of content areas that are likely to be of interest to practitioners. Continuation of dissemination of item-level descriptive statistics is therefore warranted.

Purpose

This document describes the results of a series of factor analyses conducted on data collected from the 2010-11 administration of the staff survey component of the California School Climate, Health, and Learning Surveys (Cal-SCHLS) by 351 high schools in 117 school districts in 2010-11. The purpose of these analyses was to determine the measurement structure of the items included in the 2010-11 version of the staff survey, and to ascertain whether it is feasible to create summary scales representing a smaller, more manageable number of underlying factors measured by the individual staff survey items. In addition to examining the dimensionality of scales via exploratory and confirmatory factor analysis models, we also examined the reliability of derived scales by estimating internal consistency reliability coefficients.

Sample

The analytic sample was based on Cal-SCHLS staff survey data collected from 11,322 teachers, 532 administrators, and 2,877 respondents with other roles (i.e., prevention staff nurse or health aide, counselor or psychologist, safety personnel, teacher assistant) who had non-missing data on the staff survey items. WestEd received data from 14,731 such respondents in 117 school districts and 351 high schools. After excluding cases with missing data, the final analytic sample included in the measurement analyses was comprised of 7,246 teachers, 378 administrators, and 844 staff in other roles. We analyzed staff responses to both Section 1 and Section 2 of the survey.

The majority of staff respondents reported that they had worked in the school for 6 years or more–35% reporting that they worked at the school for over 10 years, 24% 6 to 10 years, 23% 3 to five years, 9% 1 to 2 years, and 9% less than one year. Approximately 64% of respondents were white, 18% Latino/a, 6% Asian/Pacific Islander, and 12% other.

Among staff respondents who indicated that they were not teachers or administrators (other), 39% reported that they were "other classified staff" (janitor, clerical, food service); 25% were counselors/psychologists; 19% were paraprofessionals, teacher assistants, or instructional aides; and 11% were certificated staff (e.g., librarians).

Analytic Strategy

To ascertain the factor structure of the staff survey items, we fitted a series of exploratory and confirmatory factor analysis models. Exploratory factor analysis (EFA) models were estimated

to determine roughly the number of factors underlying the data and the measurement structure of the latent factors. A combination of factors was used to determine the number of factors to retain in the EFAs, including fit indices, the number of eigenvalues greater than 1, conceptual clarity, and simplicity. Models with the smallest number of possible factors and models in which each item loaded on only one latent factor (no cross-loadings) were favored over more complex models.

We then used the results of the exploratory factor analysis models as a starting point for a series of nested confirmatory factor analysis (CFA) models. We used measures of model fit, correlations among the latent constructs (factors), and factor-loading patterns to make decisions about models. Analyses were conducted separately for teachers, administrators, and other staff.

To derive estimates for the EFA and CFA models, we used Muthén and Muthén's (2010) *Mplus* statistical modeling program. Because all of the items used are dichotomous or ordinal, we used Muthén's (1984) approach to exploratory and confirmatory factor analysis with categorical indicators.

Table 1 below shows the Cal-SCHLS staff survey Section 1 items included in the analyses. We included all the items in Section 1 intended for all staff at the school. Table 2 shows survey items from Section 2 of the survey – which was intended for staff who reported that they had responsibilities for services or instruction related to health, prevention, discipline, counseling, and/or safety.

Table 1. Cal-SCHLS Staff Survey items included in measurement analyses (Section 1)

Q6. This school… is a supportive and inviting place for students to learn.

Q7. This school… sets high standards for academic performance for all students.

Q8. This school… promotes academic success for all students.

Q9. This school… emphasizes helping students academically when they need it.

Q10. This school… provides adequate counseling and support services for students.

Q11. This school… emphasizes teaching lessons that are relevant to students.

Q12. This school… is a supportive and inviting place for staff to work.

Q13. This school… promotes trust and collegiality among staff.

Q14. This school… provides the materials, resources, and training needed to do your job effectively.

Q15. This school… provides the materials, resources, and training needed to work with special education (IEP) students.

Q16. This school… encourages opportunities for students to decide things like class activities or rules.

Q17. Gives all students equal opportunity to participate in classroom discussions or activities.

Q18. This school… gives all students equal opportunity to participate in numerous extracurricular and enrichment activities.

Q19. This school… gives students opportunities to "make a difference" by helping other people, the school, or community (e.g., service learning).

Q20. This school… encourages students to enroll in rigorous courses (such as honors and AP), regardless of their race, ethnicity, or nationality.

Q21. This school… emphasizes using instructional materials that reflect the culture or ethnicity of its students.

Q22. This school… has staff examine their own cultural biases through professional development or other processes

Q23. This school… considers closing the racial/ethnic achievement gap a high priority.

Q24. This school… fosters an appreciation of student diversity and respect for each other.

Q25. This school… emphasizes showing respect for all students' cultural beliefs and practices.

Q26. This school… clearly communicates to students the consequences of breaking school rules.

Q27. This school… handles discipline problems fairly.

Q28. This school… effectively handles student discipline and behavioral problems.

Q29. This school… is a safe place for students.

Q30. This school… is a safe place for staff.

Q31. This school… is welcoming to and facilitates parent involvement

Q32. This school… has clean and well-maintained facilities and property.

Q33. How many adults at this school…really care about every student?

Q34. How many adults at this school… acknowledge and pay attention to students?

Q35. How many adults at this school… want every student to do their best?

Q36. How many adults at this school… listen to what students have to say?

Q37. How many adults at this school… believe that every student can be a success?

Q38. How many adults at this school… treat all students fairly?

Table 1. Cal-SCHLS Staff Survey items included in measurement analyses (Section 1)

Q39. How many adults at this school… treat every student with respect?

Q40. How many adults at this school… have close professional relationships with one another?

Q41. How many adults at this school… support and treat each other with respect?

Q42. How many adults at this school… feel a responsibility to improve the school?

Q43. Meeting academic standards.

Q44. Evidence-based methods of instruction.

Q45. Positive behavioral support & classroom management.

Q46. Working with diverse racial, ethnic, or cultural groups

Q47. Culturally relevant pedagogy for the school's student population.

Q48. Serving English language learners.

Q49. Closing the achievement gap.

Q50. Serving special education students.

Q51. Meeting the social, emotional, and developmental needs of youth..

Q52. Creating a positive school climate.

Q53. How many students at this school… are healthy and physically fit?

Q54. How many students at this school… arrive at school alert and rested?

Q55. How many students at this school… are motivated to learn?

Q56. How many students at this school… are well-behaved?

Q57. How much of a problem AT THIS SCHOOL is… student alcohol and drug use?

Q58. How much of a problem AT THIS SCHOOL is… student tobacco use?

Q59. How much of a problem AT THIS SCHOOL is… harassment and bullying among students.

Q60. How much of a problem AT THIS SCHOOL is… physical fighting between students?

Q61. How much of a problem AT THIS SCHOOL is… disruptive student behavior?

Q62. How much of a problem AT THIS SCHOOL is… racial/ethnic conflict among students?

Q63. How much of a problem AT THIS SCHOOL is… student depression and other mental health problems?

Q64. How much of a problem AT THIS SCHOOL is… lack of respect of staff by students?

Q65. How much of a problem AT THIS SCHOOL is… cutting classes or being truant?

Q66. How much of a problem AT THIS SCHOOL is… gang-related activity?

Q67. How much of a problem AT THIS SCHOOL is… weapons possession?

Q68. How much of a problem AT THIS SCHOOL is… vandalism (including graffit)?

Q69. How much of a problem AT THIS SCHOOL is… theft?

s1.	This school collaborates well with community organizations to help address substance use or other problems among youth.
s2.	This school collaborates well with law enforcement organizations.
s3.	This school has sufficient resources to create a safe campus.
s4.	This school has sufficient resources to address substance use prevention needs.
s5.	This school considers sanctions for student violations of rules and policies on a case–by–case basis with a wide range of options.
s6.	This school punishes first–time violations of alcohol or other drug policies by at least an out–of–school suspension.
s7.	This school enforces zero tolerance policies.
s8.	This school seeks to maintain a secure campus through such means as metal detectors, security guards, or personal searches.
s9.	This school provides effective confidential support and referral services for students needing help because of substance abuse, violence, or other problems (e.g., a Student Assistance Program).
s10.	This school considers substance abuse prevention an important goal.
s12.	This school provides adequate health services for students.
s13.	This school provides students with healthy food choices.
s14.	This school emphasizes helping students with their social, emotional, and behavioral problems.
s15.	To what extent does this school foster youth development, resilience, or asset promotion?
s16.	To what extent does this school provide nutritional instruction?
s17.	To what extent does this school provide opportunities for physical education and activity?
s18.	To what extent does this school provide alcohol or drug use prevention instruction?
s19.	To what extent does this school provide tobacco use prevention?
s20.	To what extent does this school provide conflict resolution or behavior management instruction?
s21.	To what extent does this school provide character education?
s22.	To what extent does this school provide harassment or bullying prevention?

Section 1 Items – Items for All Staff

Exploratory Factor Analysis Results – Teachers (Section 1)

Table 3 shows the goodness-of-fit information for the series of EFA models estimated. The goodness-of-fit information from the EFA models suggests that the 11-factor model provides the best fit to the data. However, for solutions involving more than 6 factors, examination of the factor patterns indicated the persistence of cross-loadings of items on multiple factors, or factors with no substantively significant item loadings. The factor patterns revealed by the higher-order solutions did not reveal distinct, interpretable underlying factors. We therefore used the 6-factor solution as our benchmark model for the CFA models. The factor pattern and

loadings for the 6-factor solution are displayed in Table 4. As shown by the **bolded loadings** in Table 4, distinct factors are apparent for the following domains: (1) school organizational supports (22 items, see O'Malley, 2011; You, O'Malley, & Furlong, 2010); (2) clarity of discipline policies/staff collegiality (5 items); (3) caring relationships among staff with students and other staff (10 items); (4) professional development needs (10 items); (5) student learning facilitative behavior (4 items); and (6) student risk, conflict, and disruptive behavior (13 items)

Table 3. Cal-SCHLS staff survey measures - goodness-of-fit information and eigenvalues for EFA models (teacher sample)

Model	RMSEA	CFI	TLI	SRMR	Eigenvalues
1 Factor	0.133	0.646	0.935	0.147	24.038
2 Factor	0.113	0.755	0.739	0.118	7.038
3 Factor	0.099	0.815	0.796	0.081	5.195
4 Factor	0.890	0.856	0.835	0.047	3.185
5 Factor	0.081	0.885	0.864	0.040	1.780
6 Factor*	0.074	0.908	0.887	0.035	1.431
7 Factor	0.067	0.927	0.907	0.031	1.294
8 Factor	0.061	0.942	0.923	0.028	1.050
9 Factor	0.056	0.952	0.935	0.025	0.996
10 Factor	0.052	0.961	0.944	0.023	0.944
11 Factor	0.047	0.968	0.953	0.020	0.884

Notes: Analytic sample consists of 7,246 teachers in comprehensive high schools who provided responses on the 2010-11 Cal-SCHLS staff survey.
* Preferred model.
RMSEA = Root Mean Square Error of Approximation (recommended value ≤0.06).
SRMR = Standardized Room Mean Square Residual (recommended value ≤0.06).
CFI = Comparative Fit Index (recommended value ≥ 0.95).
TLI = Tucker Lewis Index (recommended value ≥ 0.95).

Note that the 6 factors revealed in the model do not have an unambiguous interpretation. For example, it is unclear why the staff collegiality items would measure the same underlying factor as the items used to measure clarity of discipline policies.

Table 4. Cal-SCHLS EFA factor loadings— 6-factor solution (teachers)

Item	Item Description	1	2	3	4	5	6
Q6.	This school… is a supportive/inviting place for students to learn.	**0.69**	0.21	-0.02	0.00	0.11	0.08
Q7.	This school… high standards…academic performance…students.	**0.67**	0.17	-0.04	0.02	0.22	0.03
Q8.	This school… promotes academic success for all students.	**0.77**	0.15	-0.01	0.02	0.18	-0.02
Q9.	This school… emphasizes helping students academically when…	**0.76**	0.10	0.03	0.01	0.10	-0.06
Q10.	This school… provides adequate counseling and support service…	**0.57**	0.17	0.03	0.00	-0.01	0.01
Q11.	This school… emphasizes teaching lessons that are relevant to…	**0.73**	0.06	0.08	0.01	0.02	-0.07
Q12.	This school… is a supportive and inviting place for staff to work.	0.49	**0.55**	0.08	0.06	-0.32	0.01
Q13.	This school… promotes trust and collegiality among staff.	0.46	**0.54**	0.15	0.06	-0.36	0.00
Q14.	This school… provides…resources…to do your job effectively.	**0.61**	0.33	-0.06	-0.03	-0.24	0.02
Q15.	This school… provides…resources…to work with spec. ed. stud…	**0.62**	0.28	-0.06	-0.08	-0.24	0.03
Q16.	This school… encourages opportunities…to decide things…	**0.65**	0.05	0.02	0.03	-0.06	0.01
Q17.	This school… equal opportunity… participate…class discussions.	**0.81**	-0.06	0.05	-0.01	0.05	0.01
Q18.	This school… equal opportunity to participate in extracurricular..	**0.79**	-0.08	-0.04	0.00	0.08	0.04
Q19.	This school… students opportunities to "make a difference"…	**0.75**	-0.05	-0.01	-0.01	0.08	0.04
Q20.	This school… students to enroll in rigorous courses…race…	**0.72**	-0.02	0.00	-0.02	0.12	0.02
Q21.	This school… emphasizes using… materials that reflect the culture	**0.77**	-0.04	0.07	-0.01	-0.11	-0.06
Q22.	This school… staff examine their own cultural biases through PD…	**0.67**	0.00	0.11	-0.02	-0.17	-0.07
Q23.	This school… closing the racial/ethnic achievement gap…	**0.70**	-0.02	0.09	0.01	-0.08	-0.07
Q24.	This school… fosters appreciation student diversity and respect…	**0.87**	-0.06	0.06	0.00	-0.08	0.03
Q25.	This school… emphas. showing respect… students' cultural beliefs	**0.86**	-0.07	0.07	-0.01	-0.09	0.02
Q26.	This school… communicates…consequences… breaking… rules.	0.28	**0.69**	0.01	-0.04	0.09	-0.03
Q27.	This school… handles discipline problems fairly.	0.23	**0.76**	0.06	-0.04	0.07	-0.02
Q28.	This school… effectively handles… discipline/behav. problems.	0.21	**0.77**	0.03	-0.03	0.09	0.02
Q29.	This school… is a safe place for students.	**0.49**	0.36	-0.08	-0.02	0.04	0.32
Q30.	This school… is a safe place for staff.	**0.48**	0.39	-0.07	0.00	0.01	0.26
Q31.	This school… is welcoming to and facilitates parent involvement	**0.62**	0.18	0.05	-0.03	0.03	0.10
Q32.	This school… has clean/well-maintained facilities and property.	**0.36**	0.27	0.05	0.01	0.01	0.15
Q33.	How many adults at this school…really care about every student?	0.02	-0.02	**0.87**	0.00	0.28	-0.02
Q34.	How many adults… acknowledge/pay attention to students?	0.04	-0.03	**0.90**	-0.02	0.29	-0.03
Q35.	How many adults… want every student to do their best?	0.09	-0.03	**0.81**	-0.02	0.19	-0.02
Q36.	How many adults… listen to what students have to say?	0.05	-0.01	**0.86**	-0.02	0.14	0.00
Q37.	How many adults… believe that every student can be a success?	0.11	0.00	**0.77**	0.01	0.14	0.03
Q38.	How many adults at this school… treat all students fairly?	-0.01	0.05	**0.90**	-0.05	0.00	0.08
Q39.	How many adults… treat every student with respect?	-0.02	0.05	**0.90**	-0.04	0.00	0.08
Q40.	How many adults… close professional relationships… one anoth.	-0.02	0.35	**0.68**	0.02	-0.15	0.01
Q41.	How many adults… support and treat each other with respect?	-0.06	0.39	**0.72**	0.01	-0.17	0.03
Q42.	How many adults… feel a responsibility to improve the school?	0.04	0.25	**0.71**	0.01	-0.07	0.00
Q43.	PD needs – meeting academic standards.	0.02	-0.04	0.04	**0.85**	-0.03	0.06
Q44.	PD needs – evidence-based methods of instruction.	-0.01	0.00	0.00	**0.83**	-0.01	0.08
Q45.	PD needs – positive behavioral support & classroom management	0.05	-0.05	0.05	**0.79**	-0.10	-0.04
Q46.	PD needs – working with diverse racial, ethnic, or cultural groups	-0.03	0.06	-0.02	**0.90**	0.03	0.00
Q47.	PD needs – culturally relevant pedagogy for student population.	-0.06	0.06	0.00	**0.88**	0.02	-0.02
Q48.	PD needs – serving English language learners.	0.04	0.04	-0.02	**0.84**	0.01	0.00
Q49.	PD needs – closing the achievement gap.	-0.02	0.02	-0.03	**0.83**	0.02	0.03
Q50.	PD needs – serving special education students.	0.00	-0.01	0.01	**0.80**	0.02	-0.01
Q51.	PD needs – meeting youth social, emotional, & develop. needs	0.00	-0.01	-0.02	**0.82**	0.01	-0.04
Q52.	PD needs – creating a positive school climate.	-0.01	-0.13	-0.06	**0.78**	0.00	-0.06

9

Table 4. Cal-SCHLS EFA factor loadings— 6-factor solution (teachers)

Item	Item Description	1	2	3	4	5	6
Q53.	How many students at this school… are healthy and physically fit?	0.02	-0.01	0.15	0.05	**0.45**	0.34
Q54.	How many students at this school… arrive… alert and rested?	0.01	0.03	0.18	0.02	**0.52**	0.39
Q55.	How many students at this school… are motivated to learn?	0.05	0.08	0.14	0.05	**0.55**	0.38
Q56.	How many students at this school… are well-behaved?	-0.01	0.12	0.07	-0.02	**0.48**	0.45
Q57.	How much of a problem… alcohol and drug use?	0.01	-0.05	0.07	0.05	-0.13	**0.69**
Q58.	How much of a problem… student tobacco use?	-0.01	-0.12	0.08	0.03	-0.17	**0.66**
Q59.	How much of a problem… harassment/bullying among students.	0.08	-0.05	0.03	-0.03	-0.11	**0.72**
Q60.	How much of a problem… physical fighting between students?	0.02	-0.01	-0.03	-0.03	-0.02	**0.81**
Q61.	How much of a problem… disruptive student behavior?	0.00	0.20	-0.06	-0.02	0.15	**0.69**
Q62.	How much of a problem… racial/ethnic conflict among students?	0.08	-0.06	0.04	-0.03	-0.09	**0.67**
Q63.	How much of a problem… depression/mental health problems?	0.06	-0.04	0.02	-0.04	-0.07	**0.62**
Q64.	How much of a problem… lack of respect of staff by students?	0.01	0.21	-0.02	-0.02	0.15	**0.62**
Q65.	How much of a problem… cutting classes or being truant?	-0.02	0.15	0.01	0.00	0.11	**0.63**
Q66.	How much of a problem… gang-related activity?	-0.02	-0.02	-0.05	-0.01	0.07	**0.78**
Q67.	How much of a problem… weapons possession?	0.02	0.00	-0.03	-0.04	-0.01	**0.77**
Q68.	How much of a problem… vandalism (including graffiti)?	-0.04	0.08	0.00	0.01	0.03	**0.73**
Q69.	How much of a problem… theft?	-0.02	0.09	0.04	0.01	-0.04	**0.67**

Notes: Analytic sample consists of 7,246 teachers in comprehensive high schools who provided responses on the 2010-11 Cal-SCHLS staff survey.

  * Item dichotomized (1=yes, 0=no, not applicable).

Confirmatory Factor Analysis Results – Teachers (Section 1)

Using the 6-factor EFA model as a benchmark, we estimated a series of confirmatory factor analysis (CFA) models to determine the best model underlying the staff survey items. Measures of model fit, correlations among the constructs (factors), and factor loading patterns were used to make decisions about models. Table 5 provides goodness-of-fit information for some of the CFA models estimated.

The first estimated CFA model (model 1) in Table 5 is equivalent to the 6-factor EFA model shown in Table 4 except that, for conceptual clarity, items were allowed to load on one and only one factor (no cross-loadings). In model 2, separate school organizational support factors were delineated for the items referring to students and those referring to staff. This alteration resulted in an improvement in model fit. Model 2 was further altered to allow the items measuring staff collegiality (items q12 and q13) to load on the staff organizational supports factor (model 3), again resulting in an improvement in model fit. Subsequent modifications specified distinct factors for cultural sensitivity (model 4), meaningful participation (model 5), safety (model 6), staff relational supports (model 8), staff collegiality (model 12), and resource provision (model 12).

Other modifications did <u>not</u> result in model improvements. For example, the professional development items appear to measure a general professional development construct rather than distinct domains for professional development in the areas of instruction, cultural competence, and student needs (Model 9 vs. Model 8). Moreover, the high expectations items (q37 and q37) appear to measure the same underlying construct as the caring relationship items (q33, q34, q36, q38, and q39).[1]

Table 5. Cal-SCHLS measures - goodness-of-fit information for CFA Models (teachers)

Model	RMSEA	CFI	TLI	WRMR
Model 1 – 6 factor model consistent with benchmark EFA	0.059	0.931	0.928	5.407
Model 2 – 7 factor – separate student & staff factor	0.058	0.933	0.930	5.280
Model 3 – 7 factor – q12+q13 load on staff factor	0.056	0.937	0.935	5.092
Model 4 – 8 factor – cultural sensitivity factor	0.053	0.946	0.943	4.699
Model 5 – 9 factor – meaningful participation factor	0.051	0.949	0.947	4.498
Model 6 – 10 factor – safety factor	0.048	0.955	0.953	4.199
Model 7 – 10 factor – q40, q41, q42 load on staff support	0.054	0.942	0.939	4.787
Model 8 – 11 factor – staff relational support (q40,q41,q42)	0.044	0.962	0.959	3.850
Model 9 – 13 factor – separate profess. develop. domains	0.045	0.962	0.959	3.700
Model 10 – 12 factor – high expectations/caring relations	0.044	0.962	0.959	3.833
Model 11 – 12 factor – risky behavior/conflict	0.044	0.962	0.960	3.794
Model 12 – 12 factor – collegiality/resource provision	0.043	0.964	0.961	3.711
Model 13 – 11 factor – meaning combined with org support	0.044	0.962	0.959	3.847
Model 14 – 10 factor – cultural sensitivity with org support	0.047	0.957	0.954	4.138
Model 15 – 9 factor – comb safety with organ support	0.053	0.946	0.943	4.667
Model 16* – 8 factor – comb collegiality with org support	0.056	0.939	0.936	5.000
Model 17**– 7 factor – comb discipline polices/org support	0.063	0.922	0.919	5.720

Notes: Analytic sample consists of 7,246 teachers in comprehensive high schools who provided responses on the 2010-11 Cal-SCHLS staff survey.
* Preferred model.
** Selected model
RMSEA = Root Mean Square Error of Approximation (recommended value ≤ 0.06).
CFI = Comparative Fit Index (recommended value ≥ 0.95).
TLI = Tucker Lewis Index (recommended value ≥ 0.95).
WRMR = Weighted Root Mean Square Residual (recommended value of ≤ 1.0 or minimum value)

These analyses led us to conclude that the 12-factor solution from Model 12 provided the best fit to the sample data. However, closer scrutiny of the correlations between the latent factors from the 12-factor solution suggested that some of the factors exhibited too much overlap to be considered distinct factors. Specifically, meaningful participation was highly correlated with

[1] Although model 10, which specified separate factors for high expectations and caring relations, resulted in a slight improvement in model fit relative to model 8, the correlation of the resulting factors was 0.98. Such a high correlation indicates that the two factors are not distinct.

positive student organizational supports (0.87), cultural sensitivity (0.85) and school safety (0.79). Fornell and Larcker's (1981) test for discriminant validity of factors[2] suggested that meaningful participation, student organizational supports, and school safety did <u>not</u> adequately discriminate from each other. We therefore combined meaningful participation and student organizational supports into one factor (model 13). Inspection of the factor correlations from model 13 (and model 14) suggested that the items measuring cultural sensitivity, school safety, and staff collegiality could not discriminate from the items measuring school organizational supports. The models were altered such that these items (q21-q25, q29-q32, q12-q13) loaded on the school organizational support latent variable (models 14, 15, and 16). We conclude that 8-factor solution (model 16) is the preferred model in terms face validity, discriminant validity, model fit, and in terms of providing interpretable summary scores. However, analyses of the administrator and other staff data (see below) supported a 7-factor model – with the discipline items (q25-q27) also loading on organizational supports. So that the measures are consistent across sample, we selected the 7-factor model to represent the data (model 17).[3]

The estimated factor loadings from Model 16 are presented in Table 7. We show both "raw" and standardized loadings. For the raw loadings, the metric of the underlying factor is set to that of the first item listed for each domain. The standardized loading shows the relationship between the underlying factor and each item in standard deviation units. Overall, the factor pattern revealed by Model 17 suggests that the following seven underlying factors are measured by the Cal-SCHLS staff survey, based on teachers' responses: (1) organizational supports; (2) staff relational supports; (3) resource provision in the school; (4) staff professional development needs; (5) student supports; (6) student learning facilitative behavior; and (7) student risk behavior, conflict, and disruptive behavior.

---

[2] Fornell and Larcker's test involves comparing the average variance explained by the latent factor on observed indicators with the shared variance explained by latent factors. If the shared variance explained with any other construct is larger than the average variance explained by a latent factor, then discriminant validity is not supported.
[3] In Model 17, the correlation between the underlying factors for organizational supports and discipline policies was 0.77.

Table 7. Final 7-factor CFA model – factor loadings – Teachers

Item	Construct	Construct and Associated Items	Loadings	Standard Loadings
Q6.	Organizational	This school… is a supportive/inviting place for students to learn.	1.00	0.85
Q7.	Supports	This school… high standards…academic performance…students.	0.93	0.79
Q8.		This school… promotes academic success for all students.	1.01	0.86
Q9.		This school… emphasizes helping students academically when…	0.94	0.80
Q10.		This school… provides adequate counseling and support service…	0.80	0.68
Q11.		This school… emphasizes teaching lessons that are relevant to…	0.89	0.76
Q12.		This school… is a supportive and inviting place for staff to work.	1.01	0.86
Q13.		This school… promotes trust and collegiality among staff.	1.00	0.86
Q16.		This school… encourages opportunities…to decide things…	0.76	0.65
Q17.		This school… equal opportunity… participate…class discussions.	0.93	0.79
Q18.		This school… equal opportunity to participate in extracurricular..	0.84	0.72
Q19.		This school… students opportunities to "make a difference"…	0.84	0.72
Q20.		This school… students to enroll in rigorous courses…race…	0.84	0.72
Q21.		This school… emphasizes using… materials that reflect the culture	0.82	0.70
Q22.		This school… staff examine their own cultural biases through PD…	0.76	0.65
Q23.		This school… closing the racial/ethnic achievement gap…	0.77	0.66
Q24.		This school… fosters appreciation student diversity and respect…	0.99	0.84
Q25.		This school… emphas. showing respect… students' cultural beliefs	0.97	0.83
Q26.		This school… communicates…consequences… breaking… rules.	0.95	0.81
Q27.		This school… handles discipline problems fairly.	1.03	0.88
Q28.		This school… effectively handles… discipline/behav. problems.	1.03	0.88
Q29.		This school… is a safe place for students.	1.02	0.87
Q30.		This school… is a safe place for staff.	0.99	0.85
Q31.		This school… is welcoming to and facilitates parent involvement	0.95	0.81
Q32.		This school… has clean/well-maintained facilities and property.	0.76	0.65
Q40.	Staff	How many adults… close professional relationships… one another	1.00	0.86
Q41.	Relational	How many adults… support and treat each other with respect?	1.05	0.90
Q42.	Supports	How many adults… feel a responsibility to improve the school?	1.05	0.90
Q14.	Resource	This school… provides…resources…to do your job effectively.	1.00	0.89
Q15.	Provision	This school… provides…resources…to work with spec. ed. stud...	0.98	0.87
Q43.*	Professional	PD needs – meeting academic standards.	1.00	0.82
Q44.*	Development	PD needs – evidence-based methods of instruction.	0.98	0.80
Q45.*	Needs	PD needs – positive behavioral support & classroom management	0.96	0.79
Q46.*		PD needs – working with diverse racial, ethnic, or cultural groups	1.09	0.89
Q47.*		PD needs – culturally relevant pedagogy for student population.	1.08	0.89
Q48.*		PD needs – serving English language learners.	1.00	0.82
Q49.*		PD needs – closing the achievement gap.	1.00	0.82
Q50.*		PD needs – serving special education students.	0.97	0.79
Q51.*		PD needs – meeting youth social, emotional, & develop. needs	1.02	0.83
Q52.*		PD needs – creating a positive school climate.	1.04	0.85
Q33.	Supports	How many adults at this school…really care about every student?	1.00	0.92
Q34.	For	How many adults… acknowledge/pay attention to students?	1.03	0.95

Table 7. Final 7-factor CFA model – factor loadings – Teachers

Item	Construct	Construct and Associated Items	Loadings	Standard Loadings
Q35.	Students	How many adults… want every student to do their best?	0.97	0.89
Q36.	(Caring	How many adults… listen to what students have to say?	0.99	0.91
Q37.	Relationships	How many adults… believe that every student can be a success?	0.96	0.89
Q38.	and High	How many adults at this school… treat all students fairly?	1.02	0.94
Q39.	Expectations)	How many adults… treat every student with respect?	1.02	0.94
Q53.	Learning	How many students at this school… are healthy and physically fit?	1.00	0.69
Q54.	Facilitative	How many students at this school… arrive… alert and rested?	1.18	0.81
Q55.	Behavior	How many students at this school… are motivated to learn?	1.25	0.86
Q56.		How many students at this school… are well-behaved?	1.18	0.81
Q57.	Risk behavior,	How much of a problem… alcohol and drug use?	1.00	0.65
Q58.	Conflict, and	How much of a problem… student tobacco use?	0.86	0.56
Q59.	Disruptive	How much of a problem… harassment/bullying among students.	1.12	0.73
Q60.	Behavior	How much of a problem… physical fighting between students?	1.19	0.78
Q61.		How much of a problem… disruptive student behavior?	1.26	0.83
Q62.		How much of a problem… racial/ethnic conflict among students?	1.06	0.69
Q63.		How much of a problem… depression/mental health problems?	0.97	0.63
Q64.		How much of a problem… lack of respect of staff by students?	1.23	0.80
Q65.		How much of a problem… cutting classes or being truant?	1.14	0.75
Q66.		How much of a problem… gang-related activity?	1.09	0.71
Q67.		How much of a problem… weapons possession?	1.14	0.74
Q68.		How much of a problem… vandalism (including graffiti)?	1.13	0.74
Q69.		How much of a problem… theft?	1.08	0.71

Notes: Analytic sample consists of 7,246 teachers in comprehensive high schools who provided responses on the 2010-11 Cal-SCHLS staff survey.

 * Item dichotomized (1=yes, 0=no, not applicable).

Table 8 shows the correlations between the latent factors. High correlations between factors suggest that there is a high degree of overlap across constructs. In general, the size the correlations suggests that the factors measured are distinct from each other. However, organizational supports is highly correlated with resource provision (0.77) and student supports is strongly correlated with staff relational supports (0.83). Although highly correlated, these factors appear to exhibit adequate discriminant validity and face validity to be useful for reporting and research.[4]

---

[4] Applying Fornell and Larcker's (1981) test suggested that each of these factors demonstrated adequate discriminant validty.

Table 8. Latent factor correlations — Final CFA model (Model 12 - Teachers)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Organizational supports	1.00						
(2) Staff relational supports	0.69	1.00					
(3) Resource provision	**0.77**	0.57	1.00				
(4) Professional Develop. needs	-0.11	-0.09	-0.13	1.00			
(5) Student supports	0.65	**0.83**	0.47	-0.12	1.00		
(7) Learning facilitative behaviors	0.52	0.47	0.41	-0.09	0.46	1.00	
(8) Student risk behavior	0.53	0.41	0.42	-0.16	0.39	0.65	1.00

Notes: Analytic sample consists of 7,246 teachers in comprehensive high schools who provided responses on the 2010-11 Cal-SCHLS staff survey. **Bolded** numbers indicate correlations of sufficient magnitude to suggest possible overlap of factors.

Exploratory Factor Analysis Results – Administrators (Section 1)

Table 9 shows the goodness-of-fit information for the series of EFA models estimated for the sample of administrators. The goodness-of-fit information from the EFA models suggests that the 7-factor model provides the best fit to the data, as indicated by all the fit indices surpassing recommended thresholds. However, the factor patterns revealed by the 5-, 6-, and 7-factor solutions did not reveal distinct, interpretable underlying factors. We therefore used the 4-factor solution as our benchmark model for the administrator CFA models. The factor pattern and loadings for the 4-factor solution are displayed in Table 10. As shown by the **bolded loadings** in Table 10, distinct factors are apparent for the following domains: (1) school organizational supports, (2) caring relationships among staff with students and other staff, (3) professional development needs, and (4) student learning facilitative behavior and risk.

Table 9. Cal-SCHLS staff survey measures - goodness-of-fit information and eigenvalues
for EFA models (administrator sample)

Model	RMSEA	CFI	TLI	SRMR	Eigenvalues
1 Factor	0.106	0.750	0.742	0.153	22.082
2 Factor	0.086	0.840	0.829	0.127	7.045
3 Factor	0.069	0.899	0.889	0.089	5.403
4 Factor*	0.058	0.932	0.923	0.065	3.479
5 Factor	0.052	0.948	0.938	0.054	2.406
6 Factor	0.048	0.956	0.947	0.050	1.682
7 Factor	0.044	0.965	0.955	0.046	1.533

Notes: Analytic sample consists of 378 administrators in comprehensive high schools who provided
responses on the 2010-11 Cal-SCHLS staff survey.

* Preferred model.

RMSEA = Root Mean Square Error of Approximation (recommended value ≤0.06).

SRMR = Standardized Room Mean Square Residual (recommended value ≤0.06).

CFI = Comparative Fit Index (recommended value ≥ 0.95).

TLI = Tucker Lewis Index (recommended value ≥ 0.95).

Table 10. Cal-SCHLS EFA factor loadings— 4-factor solution (administrators)

Item	Item Description	1	2	3	4
Q6.	This school… is a supportive/inviting place for students to learn.	**0.70**	0.12	-0.02	0.14
Q7.	This school… high standards…academic performance…students.	**0.73**	0.08	0.01	0.05
Q8.	This school… promotes academic success for all students.	**0.82**	0.11	-0.01	-0.08
Q9.	This school… emphasizes helping students academically when…	**0.80**	0.10	-0.03	-0.14
Q10.	This school… provides adequate counseling and support service…	**0.62**	-0.07	-0.08	-0.01
Q11.	This school… emphasizes teaching lessons that are relevant to…	**0.77**	0.10	0.03	-0.08
Q12.	This school… is a supportive and inviting place for staff to work.	**0.70**	0.18	0.05	0.04
Q13.	This school… promotes trust and collegiality among staff.	**0.72**	0.17	0.07	-0.02
Q14.	This school… provides…resources…to do your job effectively.	**0.69**	0.04	-0.09	-0.11
Q15.	This school… provides…resources…to work with spec. ed. stud…	**0.74**	0.03	0.00	-0.13
Q16.	This school… encourages opportunities…to decide things…	**0.63**	0.10	0.09	-0.08
Q17.	This school… equal opportunity… participate…class discussions.	**0.76**	0.07	0.06	-0.10
Q18.	This school… equal opportunity to participate in extracurricular..	**0.76**	-0.04	0.05	0.03
Q19.	This school… students opportunities to "make a difference"…	**0.70**	0.02	0.07	0.06
Q20.	This school… students to enroll in rigorous courses…race…	**0.77**	-0.04	0.06	0.02
Q21.	This school… emphasizes using… materials that reflect the culture	**0.78**	0.10	0.12	-0.17
Q22.	This school… staff examine their own cultural biases through PD…	**0.74**	0.05	0.15	-0.14
Q23.	This school… closing the racial/ethnic achievement gap…	**0.65**	0.12	0.16	-0.09
Q24.	This school… fosters appreciation student diversity and respect…	**0.82**	0.10	0.32	0.03
Q25.	This school… emphas. showing respect… students' cultural beliefs	**0.80**	0.11	0.31	0.04
Q26.	This school… communicates…consequences… breaking… rules.	**0.86**	-0.21	-0.07	0.07
Q27.	This school… handles discipline problems fairly.	**1.08**	-0.36	-0.11	0.03
Q28.	This school… effectively handles… discipline/behav. problems.	**1.03**	-0.35	-0.13	0.08
Q29.	This school… is a safe place for students.	**0.74**	-0.11	-0.03	0.27
Q30.	This school… is a safe place for staff.	**0.78**	-0.09	-0.03	0.22
Q31.	This school… is welcoming to and facilitates parent involvement	**0.71**	0.04	0.01	0.16
Q32.	This school… has clean/well-maintained facilities and property.	**0.59**	-0.04	0.09	0.08
Q33.	How many adults at this school…really care about every student?	0.09	**0.82**	-0.01	0.08
Q34.	How many adults… acknowledge/pay attention to students?	0.03	**0.94**	0.00	0.06
Q35.	How many adults… want every student to do their best?	0.05	**0.87**	-0.07	-0.01
Q36.	How many adults… listen to what students have to say?	0.10	**0.83**	0.01	0.00
Q37.	How many adults… believe that every student can be a success?	0.12	**0.87**	0.08	-0.05
Q38.	How many adults at this school… treat all students fairly?	0.01	**0.90**	-0.09	0.22
Q39.	How many adults… treat every student with respect?	0.05	**0.83**	-0.10	0.21
Q40.	How many adults… close professional relationships… one anoth.	0.23	**0.68**	-0.14	-0.02
Q41.	How many adults… support and treat each other with respect?	0.19	**0.71**	-0.20	0.01
Q42.	How many adults… feel a responsibility to improve the school?	0.20	**0.70**	-0.07	-0.07
Q43*.	PD needs – meeting academic standards.	0.08	-0.06	**0.82**	0.06
Q44.*	PD needs – evidence-based methods of instruction.	0.05	-0.04	**0.85**	0.05
Q45.*	PD needs – positive behavioral support & classroom management	-0.01	0.01	**0.79**	-0.13
Q46.*	PD needs – working with diverse racial, ethnic, or cultural groups	0.09	-0.05	**0.85**	-0.03
Q47.*	PD needs – culturally relevant pedagogy for student population.	-0.04	-0.01	**0.83**	0.00
Q48.*	PD needs – serving English language learners.	-0.11	0.08	**0.77**	0.02
Q49.*	PD needs – closing the achievement gap.	-0.01	0.06	**0.78**	0.11
Q50.*	PD needs – serving special education students.	-0.03	-0.01	**0.81**	0.07

Table 10. Cal-SCHLS EFA factor loadings— 4-factor solution (administrators)

Item	Item Description	1	2	3	4
Q51.*	PD needs – meeting youth social, emotional, & develop. needs	0.02	-0.08	**0.85**	-0.13
Q52.*	PD needs – creating a positive school climate.	-0.06	-0.10	**0.80**	-0.11
Q53.	How many students at this school… are healthy and physically fit?	-0.23	0.39	0.07	**0.46**
Q54.	How many students at this school… arrive… alert and rested?	-0.28	0.41	0.04	**0.66**
Q55.	How many students at this school… are motivated to learn?	-0.08	0.41	0.09	**0.54**
Q56.	How many students at this school… are well-behaved?	-0.07	0.30	-0.05	**0.62**
Q57.	How much of a problem… alcohol and drug use?	0.17	-0.10	0.06	**0.39**
Q58.	How much of a problem… student tobacco use?	0.09	-0.13	0.08	**0.37**
Q59.	How much of a problem… harassment/bullying among students.	0.04	0.03	-0.08	**0.56**
Q60.	How much of a problem… physical fighting between students?	0.06	-0.03	-0.07	**0.74**
Q61.	How much of a problem… disruptive student behavior?	0.11	0.10	-0.03	**0.70**
Q62.	How much of a problem… racial/ethnic conflict among students?	0.16	-0.07	-0.01	**0.49**
Q63.	How much of a problem… depression/mental health problems?	0.05	0.02	-0.03	**0.47**
Q64.	How much of a problem… lack of respect of staff by students?	0.12	0.09	-0.05	**0.63**
Q65.	How much of a problem… cutting classes or being truant?	0.08	0.04	0.03	**0.60**
Q66.	How much of a problem… gang-related activity?	0.05	0.04	0.00	**0.71**
Q67.	How much of a problem… weapons possession?	0.09	-0.10	0.03	**0.65**
Q68.	How much of a problem… vandalism (including graffiti)?	0.08	-0.07	-0.01	**0.62**
Q69.	How much of a problem… theft?	-0.01	-0.02	-0.03	**0.48**

Notes: Analytic sample consists of 378 administrators in comprehensive high schools who provided responses on the 2010-11 Cal-SCHLS staff survey.
* Item dichotomized (1=yes, 0=no, not applicable).

Confirmatory Factor Analysis Results – Administrators (Section 1)

We used the same process as that used for the teacher sample to determine the best model underlying the staff survey items for administrators. Specifically, we used the 4-factor EFA model as a benchmark, and estimated a series of confirmatory factor analysis (CFA) models to determine the best fitting model. After identifying the best fitting model, we examined latent variable correlations to determine if the set of factors identified could adequately discriminate from one another. Factors exhibiting correlations that were too high to pass Fornell and Larker's (1981) discriminant validity test were combined to represent a smaller number of distinct factors.

Table 11 shows goodness-of-fit information for the CFA models estimated for the administrator sample. As with the teacher sample, the 12-factor solution (model 9) demonstrated the best fit to the sample data. However, after combining factors with particularly strong correlations, we found that a 7-factor was the most appropriate model underlying the data. This model is similar to the preferred 8-factor model identified for teachers except that, for administrators, the items measuring clear discipline policies better represented the global organizational supports factor than a separate factor.

Table 11. Cal-SCHLS measures - goodness-of-fit information for CFA Models (administrators)

Model	RMSEA	CFI	TLI	WRMR
Model 1 – 4 factor model consistent with benchmark EFA	0.050	0.945	0.943	1.593
Model 2 – 5 factor – separate discipline policies factor	0.047	0.951	0.950	1.504
Model 3 – 6 factor – separate safety factor	0.044	0.957	0.955	1.431
Model 4 – 7 factor – separate organizational supports	0.043	0.960	0.958	1.382
Model 5 – 8 factor – student supports/staff relational supp	0.041	0.962	0.960	1.348
Model 6 – 9 factor – separate staff collegiality factor	0.040	0.964	0.962	1.317
Model 7 – 10 factor – separate resource provision factor	0.040	0.966	0.964	1.290
Model 8 – 11 factor – separate meaningful opportunities	0.038	0.968	0.966	1.246
Model 9 – 12 factor – separate learning facilitative behavior	0.035	0.974	0.972	1.145
Model 10 – 11 factor – combine meaning/organ supports	0.036	0.972	0.970	1.179
Model 11 – 10 factor – combined safety/organ supports	0.039	0.967	0.966	1.252
Model 12 – 9 factor – combined cultural sensitivity/org sup	0.042	0.962	0.960	1.335
Model 13 – 8 factor – combined collegiality/org support	0.043	0.959	0.957	1.372
Model 14* – 7 factor – combined clear discipline/org supp.	0.046	0.952	0.950	1.468

Notes: Analytic sample consists of 378 administrators in comprehensive high schools who provided responses
     on the 2010-11 Cal-SCHLS staff survey.
    * Preferred model.
    RMSEA = Root Mean Square Error of Approximation (recommended value ≤ 0.06).
    CFI = Comparative Fit Index (recommended value ≥ 0.95).
    TLI = Tucker Lewis Index (recommended value ≥ 0.95).
    WRMR = Weighted Root Mean Square Residual (recommended value of ≤ 1.0 or minimum value)

The estimated factor loadings from model 14 are presented in Table 12. As shown in the table, the following seven factors are measured by the Cal-SCHLS staff survey, based on administrators' responses: (1) organizational supports; (2) staff relational supports; (3) resource provision in the school; (4) staff professional development needs; (5) student supports; (6) student learning facilitative behavior; and (7) student risk behavior, conflict, and disruptive behavior.

The pattern of correlations between factors (Table 13) for the administrator sample is very similar to that exhibited by the teacher sample. These correlations suggest that the factors measured are distinct from each other. As was the case for the teacher sample, organizational supports is highly correlated with resource provision (0.78) and student supports is strongly correlated with staff relational supports (0.87).[5]

---

[5] Applying Fornell and Larcker's (1981) test suggested that each of these factors demonstrated adequate discriminant validty.

Table 12. Final 7-factor CFA model – factor loadings – Administrators

Item	Construct	Construct and Associated Items	Loadings	Standard Loadings
Q6.	Organizational	This school… is a supportive/inviting place for students to learn.	1	0.84
Q7.	Supports	This school… high standards…academic performance…students.	0.96	0.81
Q8.		This school… promotes academic success for all students.	1.03	0.86
Q9.		This school… emphasizes helping students academically when…	0.98	0.82
Q10.		This school… provides adequate counseling and support service…	0.69	0.57
Q11.		This school… emphasizes teaching lessons that are relevant to…	0.96	0.80
Q12.		This school… is a supportive and inviting place for staff to work.	1.00	0.83
Q13.		This school… promotes trust and collegiality among staff.	0.98	0.82
Q16.		This school… encourages opportunities…to decide things…	0.79	0.66
Q17.		This school… equal opportunity… participate…class discussions.	0.91	0.76
Q18.		This school… equal opportunity to participate in extracurricular..	0.89	0.74
Q19.		This school… students opportunities to "make a difference"…	0.87	0.73
Q20.		This school… students to enroll in rigorous courses…race…	0.89	0.74
Q21.		This school… emphasizes using… materials that reflect the culture	0.93	0.78
Q22.		This school… staff examine their own cultural biases through PD…	0.86	0.72
Q23.		This school… closing the racial/ethnic achievement gap…	0.82	0.69
Q24.		This school… fosters appreciation student diversity and respect…	1.06	0.89
Q25.		This school… emphas. showing respect… students' cultural beliefs	1.05	0.88
Q26.		This school… communicates…consequences… breaking… rules.	0.91	0.76
Q27.		This school… handles discipline problems fairly.	1.08	0.91
Q28.		This school… effectively handles… discipline/behav. problems.	1.05	0.87
Q29.		This school… is a safe place for students.	0.92	0.77
Q30.		This school… is a safe place for staff.	0.97	0.81
Q31.		This school… is welcoming to and facilitates parent involvement	0.95	0.80
Q32.		This school… has clean/well-maintained facilities and property.	0.70	0.58
Q40.	Staff	How many adults… close professional relationships… one another	1	0.91
Q41.	Relational	How many adults… support and treat each other with respect?	1.01	0.92
Q42.	Supports	How many adults… feel a responsibility to improve the school?	0.98	0.89
Q14.	Resource	This school… provides…resources…to do your job effectively.	1	0.83
Q15.	Provision	This school… provides…resources…to work with spec. ed. stud…	1.04	0.87
Q43.*	Professional	PD needs – meeting academic standards.	1	0.81
Q44.*	Development	PD needs – evidence-based methods of instruction.	1.04	0.84
Q45.*	Needs	PD needs – positive behavioral support & classroom management	1.01	0.81
Q46.*		PD needs – working with diverse racial, ethnic, or cultural groups	1.04	0.84
Q47.*		PD needs – culturally relevant pedagogy for student population.	1.04	0.84
Q48.*		PD needs – serving English language learners.	0.99	0.80
Q49.*		PD needs – closing the achievement gap.	0.93	0.75
Q50.*		PD needs – serving special education students.	1.00	0.81
Q51.*		PD needs – meeting youth social, emotional, & develop. needs	1.10	0.88
Q52.*		PD needs – creating a positive school climate.	1.07	0.87
Q33.	Supports	How many adults at this school…really care about every student?	1	0.90
Q34.	For	How many adults… acknowledge/pay attention to students?	1.08	0.96

Table 12. Final 7-factor CFA model – factor loadings – Administrators

Item	Construct	Construct and Associated Items	Loadings	Standard Loadings
Q35.	Students	How many adults… want every student to do their best?	1.01	0.90
Q36.	(Caring	How many adults… listen to what students have to say?	1.00	0.89
Q37.	Relationships	How many adults… believe that every student can be a success?	1.05	0.94
Q38.	and High	How many adults at this school… treat all students fairly?	1.07	0.96
Q39.	Expectations)	How many adults… treat every student with respect?	1.03	0.93
Q53.	Learning	How many students at this school… are healthy and physically fit?	1	0.57
Q54.	Facilitative	How many students at this school… arrive… alert and rested?	1.23	0.70
Q55.	Behavior	How many students at this school… are motivated to learn?	1.48	0.84
Q56.		How many students at this school… are well-behaved?	1.43	0.81
Q57.	Risk behavior,	How much of a problem… alcohol and drug use?	1	0.48
Q58.	Conflict, and	How much of a problem… student tobacco use?	0.71	0.34
Q59.	Disruptive	How much of a problem… harassment/bullying among students.	1.27	0.61
Q60.	Behavior	How much of a problem… physical fighting between students?	1.56	0.75
Q61.		How much of a problem… disruptive student behavior?	1.75	0.84
Q62.		How much of a problem… racial/ethnic conflict among students?	1.21	0.58
Q63.		How much of a problem… depression/mental health problems?	1.09	0.52
Q64.		How much of a problem… lack of respect of staff by students?	1.60	0.77
Q65.		How much of a problem… cutting classes or being truant?	1.39	0.67
Q66.		How much of a problem… gang-related activity?	1.52	0.73
Q67.		How much of a problem… weapons possession?	1.32	0.63
Q68.		How much of a problem… vandalism (including graffiti)?	1.29	0.62
Q69.		How much of a problem… theft?	0.94	0.45

Notes: Analytic sample consists of 378 administrators in comprehensive high schools who provided responses on the 2010-11 Cal-SCHLS staff survey.
  * Item dichotomized (1=yes, 0=no, not applicable).

Table 13. Latent factor correlations — Final CFA model (Model 14 - Administrators)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Organizational supports	1.00						
(2) Staff relational supports	0.67	1.00					
(3) Resource provision	**0.78**	0.56	1.00				
(4) Professional Develop. needs	-0.07	-0.19	-0.13	1.00			
(5) Student supports	0.65	**0.87**	0.54	-0.11	1.00		
(7) Learning facilitative behaviors	0.38	0.37	0.19	-0.07	0.42	1.00	
(8) Student risk behavior	0.43	0.23	0.30	-0.13	0.24	0.56	1.00

Notes: Analytic sample consists of 378 administrators in comprehensive high schools who provided responses on the 2010-11 Cal-SCHLS staff survey. **Bolded** numbers indicate correlations of sufficient magnitude to suggest possible overlap of factors.

Exploratory Factor Analysis Results – Other Staff (Section 1)

Turning to the analysis other staff (those who did not report that they were teachers or administrators), the goodness-of-fit information from the EFA models (Table 14) suggests that the 9-factor model provides the best fit to the data. Examination of the factor patterns revealed by the seven or higher-order solutions did not reveal distinct, interpretable underlying factors. We therefore use the 6-factor solution as our benchmark model for the other staff CFA models. The factor pattern and loadings for the 6-factor solution are displayed in Table 14. As shown, factors are apparent for the following domains: (1) school organizational supports; (2) clear discipline policies; (3) caring relationships among staff with students and other staff; (4) professional development needs; (5) student learning facilitative behavior; and (6) student health risk.

Table 14. Cal-SCHLS staff survey measures - goodness-of-fit information and eigenvalues for EFA models (other staff)

Model	RMSEA	CFI	TLI	SRMR	Eigenvalues
1 Factor	0.128	0.749	0.740	0.159	26.681
2 Factor	0.112	0.814	0.802	0.130	7.156
3 Factor	0.099	0.857	0.843	0.094	5.702
4 Factor	0.087	0.895	0.880	0.056	3.079
5 Factor	0.076	0.923	0.909	0.045	1.761
6 Factor*	0.068	0.939	0.926	0.039	1.374
7 Factor	0.062	0.952	0.939	0.034	1.262
8 Factor	0.057	0.961	0.949	0.030	1.039
9 Factor	0.051	0.969	0.958	0.027	0.956

Notes: Analytic sample consists of 7,246 teachers in comprehensive high schools who provided responses on the 2010-11 Cal-SCHLS staff survey.
   * Preferred model.
   RMSEA = Root Mean Square Error of Approximation (recommended value ≤0.06).
   SRMR = Standardized Room Mean Square Residual (recommended value ≤0.06).
   CFI = Comparative Fit Index (recommended value ≥ 0.95).
   TLI = Tucker Lewis Index (recommended value ≥ 0.95).

Table 15. Cal-SCHLS EFA factor loadings— 6-factor solution (other staff)

Item	Item Description	1	2	3	4	5	6
Q6.	This school… is a supportive/inviting place for students to learn.	**0.85**	0.03	0.02	0.10	-0.01	0.08
Q7.	This school… high standards…academic performance…students.	**0.82**	-0.06	0.01	0.07	0.04	0.08
Q8.	This school… promotes academic success for all students.	**0.94**	-0.14	-0.01	0.11	-0.01	0.10
Q9.	This school… emphasizes helping students academically when…	**0.90**	-0.11	0.00	0.10	-0.03	0.04
Q10.	This school… provides adequate counseling/support services…	**0.71**	0.02	0.01	0.01	-0.02	0.06
Q11.	This school… emphasizes teaching lessons that are relevant to…	**0.74**	-0.04	0.16	-0.01	-0.02	0.00
Q12.	This school… is a supportive and inviting place for staff to work.	**0.65**	0.22	0.22	-0.03	-0.34	0.01
Q13.	This school… promotes trust and collegiality among staff.	**0.65**	0.20	0.24	-0.04	-0.36	-0.01
Q14.	This school… provides…resources…to do your job effectively.	**0.71**	0.12	0.05	-0.07	-0.16	0.00
Q15.	This school… provides…resources…to work with spec. ed. stud…	**0.72**	0.06	0.05	-0.10	-0.12	0.03
Q16.	This school… encourages opportunities…to decide things…	**0.79**	-0.03	-0.04	-0.03	0.01	0.06
Q17.	This school… equal opportunity… participate…class discussions.	**0.83**	0.00	0.03	0.00	0.02	-0.05
Q18.	This school… equal opportunity to participate in extracurricular..	**0.80**	0.07	0.00	-0.02	0.08	-0.05
Q19.	This school… students opportunities to "make a difference"…	**0.80**	0.03	-0.10	-0.02	0.11	0.02
Q20.	This school… students to enroll in rigorous courses…race…	**0.73**	0.02	0.03	0.01	0.13	-0.06
Q21.	This school… emphasizes using… materials… reflect the culture	**0.80**	-0.08	0.03	-0.09	0.08	-0.06
Q22.	This school… staff examine own cultural biases through PD…	**0.73**	-0.11	0.09	-0.13	0.03	-0.04
Q23.	This school… closing the racial/ethnic achievement gap…	**0.70**	-0.03	0.10	-0.08	0.15	-0.06
Q24.	This school… fosters appreciation student diversity and respect…	**0.86**	-0.02	0.00	-0.01	0.39	-0.04
Q25.	This school… emphas. showing respect… students' cultur beliefs	**0.84**	-0.02	0.00	0.00	0.40	-0.05
Q26.	This school… communicates…consequences… breaking… rules.	**0.54**	**0.48**	0.08	-0.03	0.05	0.00
Q27.	This school… handles discipline problems fairly.	0.44	**0.63**	0.15	-0.06	0.07	-0.01
Q28.	This school… effectively handles… discipline/behav. problems.	0.45	**0.65**	0.14	-0.08	0.06	-0.02
Q29.	This school… is a safe place for students.	**0.68**	0.49	-0.14	0.11	-0.04	0.26
Q30.	This school… is a safe place for staff.	**0.72**	0.50	-0.15	0.11	-0.06	0.24
Q31.	This school… is welcoming to and facilitates parent involvement	**0.69**	0.19	0.03	-0.01	0.01	0.09
Q32.	This school… has clean/well-maintained facilities and property.	0.48	0.20	0.05	0.01	0.00	0.15
Q33.	How many adults at this school…really care abt every student?	0.03	-0.08	**0.89**	0.03	0.07	0.02
Q34.	How many adults… acknowledge/pay attention to students?	0.03	-0.08	**0.93**	0.03	0.09	0.03
Q35.	How many adults… want every student to do their best?	0.00	-0.05	**0.89**	0.04	0.07	0.01
Q36.	How many adults… listen to what students have to say?	0.07	-0.08	**0.87**	0.00	0.04	0.02
Q37.	How many adults… believe that every student can be a success?	0.11	-0.06	**0.84**	-0.02	0.02	0.01
Q38.	How many adults at this school… treat all students fairly?	-0.04	0.08	**0.94**	0.03	-0.01	0.05
Q39.	How many adults… treat every student with respect?	-0.06	0.08	**0.96**	0.07	-0.01	0.06
Q40.	How many adults… close professional relationships… one anoth.	0.05	0.06	**0.82**	-0.04	-0.20	-0.01
Q41.	How many adults… support and treat each other with respect?	0.03	0.09	**0.84**	-0.03	-0.22	0.02
Q42.	How many adults… feel a responsibility to improve the school?	0.10	0.04	**0.81**	-0.02	-0.11	-0.01
Q43.*	PD needs – meeting academic standards.	0.00	-0.05	0.08	**0.88**	-0.02	0.01
Q44.*	PD needs – evidence-based methods of instruction.	-0.02	-0.03	0.09	**0.87**	-0.02	0.08
Q45.*	PD needs – positive behavioral support & classroom managemt	0.05	-0.08	-0.05	**0.83**	0.00	-0.02
Q46.*	PD needs – working with diverse racial, ethnic, or cultural groups	0.04	0.00	-0.07	**0.89**	0.01	0.01
Q47.*	PD needs – culturally relevant pedagogy for student population.	0.04	0.02	-0.06	**0.90**	-0.02	-0.01
Q48.*	PD needs – serving English language learners.	0.02	0.12	0.06	**0.85**	0.02	-0.07
Q49.*	PD needs – closing the achievement gap.	-0.04	0.06	0.02	**0.86**	-0.02	-0.04
Q50.*	PD needs – serving special education students.	-0.05	0.07	0.04	**0.84**	0.00	-0.07
Q51.*	PD needs – meeting youth social, emotional, & develop. needs	-0.05	-0.02	0.01	**0.90**	0.05	-0.02

Table 15. Cal-SCHLS EFA factor loadings— 6-factor solution (other staff)

Item	Item Description	1	2	3	4	5	6
Q52.*	PD needs – creating a positive school climate.	-0.04	-0.06	-0.06	**0.82**	0.03	-0.01
Q53.	How many students at this school… healthy and physically fit?	-0.04	0.04	0.06	-0.05	**0.51**	0.47
Q54.	How many students at this school… arrive… alert and rested?	0.03	0.09	0.04	-0.03	**0.61**	0.56
Q55.	How many students at this school… are motivated to learn?	0.11	0.16	0.03	0.00	**0.57**	0.52
Q56.	How many students at this school… are well-behaved?	0.01	0.23	0.01	-0.02	**0.49**	0.54
Q57.	How much of a problem… alcohol and drug use?	0.08	-0.31	0.03	-0.04	-0.08	**0.74**
Q58.	How much of a problem… student tobacco use?	0.04	-0.29	0.02	-0.01	-0.06	**0.73**
Q59.	How much of a problem… harassment/bullying among students.	0.10	-0.06	-0.03	-0.08	-0.04	**0.74**
Q60.	How much of a problem… physical fighting between students?	0.02	-0.01	-0.05	0.00	0.04	**0.84**
Q61.	How much of a problem… disruptive student behavior?	0.03	0.06	0.03	-0.03	0.11	**0.75**
Q62.	How much of a problem… racial/ethnic conflict among students?	0.01	-0.04	0.02	-0.03	-0.03	**0.72**
Q63.	How much of a problem… depression/mental health problems?	0.02	-0.11	0.00	-0.07	-0.02	**0.67**
Q64.	How much of a problem… lack of respect of staff by students?	-0.02	0.16	0.09	-0.04	0.10	**0.67**
Q65.	How much of a problem… cutting classes or being truant?	0.02	0.01	0.04	0.01	0.09	**0.69**
Q66.	How much of a problem… gang-related activity?	-0.05	-0.04	0.00	0.00	0.08	**0.76**
Q67.	How much of a problem… weapons possession?	-0.03	-0.02	-0.04	0.03	0.01	**0.81**
Q68.	How much of a problem… vandalism (including graffiti)?	-0.13	0.03	0.01	0.04	-0.01	**0.79**
Q69.	How much of a problem… theft?	-0.07	0.00	0.06	0.05	-0.03	**0.74**

Notes: Analytic sample consists of 1,146 "other staff" members in comprehensive high schools who provided responses on the 2010-11 Cal-SCHLS staff survey.

  * Item dichotomized (1=yes, 0=no, not applicable).

Confirmatory Factor Analysis Results – Other Staff (Section 1)

Table 16 shows goodness-of-fit information for the CFA models estimated for the other staff sample. As with the other samples, the 12-factor solution (model 7) demonstrated the best fit to the sample data. However, after combining factors with particularly strong correlations, we again found that a 7-factor was the most appropriate model underlying the data. Thus, the configuration of factors is the same for other staff as it is for administrators. Table 16 shows the estimated factor loadings and Table 17 shows the factor correlations. As with the other samples, organizational supports is highly correlated with resource provision (0.81) and student supports is strongly correlated with staff relational supports (0.89).[6]

---

[6] Applying Fornell and Larcker's (1981) test suggested that each of these factors demonstrated adequate discriminant validty.

Table 16. Cal-SCHLS measures - goodness-of-fit information for CFA Models (other staff)

Model	RMSEA	CFI	TLI	WRMR
Model 1 – 6 factor model consistent with benchmark EFA	0.058	0.949	0.947	2.337
Model 2 – 7 factor – staff relational supports factor	0.057	0.951	0.949	2.292
Model 3 – 8 factor – resource deployment factor	0.056	0.953	0.950	2.239
Model 4 – 9 factor – staff collegiality factor	0.053	0.957	0.955	2.113
Model 5 – 10 factor – meaningful participation factor	0.052	0.959	0.956	2.076
Model 6 – 11 factor – cultural sensitivity factor	0.046	0.968	0.966	1.833
Model 7 – 12 factor – safety factor	0.041	0.975	0.973	1.620
Model 8 – 11 – combine meaning partic w org supports	0.043	0.973	0.971	1.682
Model 9 – 10 – combine cultural sensitivity w org supp	0.046	0.968	0.966	1.828
Model 10 – 8 factor model (teacher preferred model)	0.056	0.953	0.950	2.239
Model 11* – 7 factor model (other preferred model)	0.063	0.940	0.937	2.543

Notes: Analytic sample consists of 378 administrators in comprehensive high schools who provided responses
on the 2010-11 Cal-SCHLS staff survey.
* Preferred model.
RMSEA = Root Mean Square Error of Approximation (recommended value ≤ 0.06).
CFI = Comparative Fit Index (recommended value ≥ 0.95).
TLI = Tucker Lewis Index (recommended value ≥ 0.95).
WRMR = Weighted Root Mean Square Residual (recommended value of ≤ 1.0 or minimum value)

Table 17. Final 7-factor CFA model – factor loadings – Administrators

Item	Construct	Construct and Associated Items	Loadings	Standard Loadings
Q6.	Organizational	This school… is a supportive/inviting place for students to learn.	1.00	0.87
Q7.	Supports	This school… high standards…academic performance…students.	0.95	0.83
Q8.		This school… promotes academic success for all students.	1.02	0.89
Q9.		This school… emphasizes helping students academically when…	0.96	0.84
Q10.		This school… provides adequate counseling and support service…	0.83	0.73
Q11.		This school… emphasizes teaching lessons that are relevant to…	0.96	0.83
Q12.		This school… is a supportive and inviting place for staff to work.	0.98	0.86
Q13.		This school… promotes trust and collegiality among staff.	0.99	0.86
Q16.		This school… encourages opportunities…to decide things…	0.87	0.76
Q17.		This school… equal opportunity… participate…class discussions.	0.93	0.81
Q18.		This school… equal opportunity to participate in extracurricular..	0.91	0.79
Q19.		This school… students opportunities to "make a difference"…	0.84	0.74
Q20.		This school… students to enroll in rigorous courses…race…	0.84	0.73
Q21.		This school… emphasizes using… materials that reflect the culture	0.89	0.78
Q22.		This school… staff examine their own cultural biases through PD…	0.86	0.75
Q23.		This school… closing the racial/ethnic achievement gap…	0.87	0.76
Q24.		This school… fosters appreciation student diversity and respect…	1.04	0.91
Q25.		This school… emphas. showing respect… students' cultural beliefs	1.02	0.89
Q26.		This school… communicates…consequences… breaking… rules.	0.93	0.81
Q27.		This school… handles discipline problems fairly.	1.04	0.91
Q28.		This school… effectively handles… discipline/behav. problems.	1.05	0.92
Q29.		This school… is a safe place for students.	1.06	0.93
Q30.		This school… is a safe place for staff.	1.08	0.94
Q31.		This school… is welcoming to and facilitates parent involvement	0.92	0.80
Q32.		This school… has clean/well-maintained facilities and property.	0.76	0.67
Q40.	Staff	How many adults… close professional relationships… one another	1.00	0.88
Q41.	Relational	How many adults… support and treat each other with respect?	1.03	0.91
Q42.	Supports	How many adults… feel a responsibility to improve the school?	1.05	0.92
Q14.	Resource	This school… provides…resources…to do your job effectively.	1.00	0.89
Q15.	Provision	This school… provides…resources…to work with spec. ed. stud…	1.02	0.91
Q43.*	Professional	PD needs – meeting academic standards.	1.00	0.86
Q44.*	Development	PD needs – evidence-based methods of instruction.	0.94	0.81
Q45.*	Needs	PD needs – positive behavioral support & classroom management	0.99	0.85
Q46.*		PD needs – working with diverse racial, ethnic, or cultural groups	1.04	0.89
Q47.*		PD needs – culturally relevant pedagogy for student population.	1.06	0.91
Q48.*		PD needs – serving English language learners.	0.93	0.80
Q49.*		PD needs – closing the achievement gap.	1.03	0.88
Q50.*		PD needs – serving special education students.	1.00	0.86
Q51.*		PD needs – meeting youth social, emotional, & develop. needs	1.06	0.91
Q52.*		PD needs – creating a positive school climate.	1.03	0.88

Table 17. Final 7-factor CFA model – factor loadings – Administrators

Item	Construct	Construct and Associated Items	Loadings	Standard Loadings
Q33.	Supports	How many adults at this school…really care about every student?	1.00	0.91
Q34.	For	How many adults… acknowledge/pay attention to students?	1.05	0.96
Q35.	Students	How many adults… want every student to do their best?	0.98	0.89
Q36.	(Caring	How many adults… listen to what students have to say?	1.01	0.93
Q37.	Relationships	How many adults… believe that every student can be a success?	1.01	0.92
Q38.	and High	How many adults at this school… treat all students fairly?	1.04	0.95
Q39.	Expectations)	How many adults… treat every student with respect?	1.05	0.96
Q53.	Learning	How many students at this school… are healthy and physically fit?	1.00	0.71
Q54.	Facilitative	How many students at this school… arrive… alert and rested?	1.25	0.89
Q55.	Behavior	How many students at this school… are motivated to learn?	1.31	0.94
Q56.		How many students at this school… are well-behaved?	1.19	0.84
Q57.	Risk behavior,	How much of a problem… alcohol and drug use?	1.00	0.71
Q58.	Conflict, and	How much of a problem… student tobacco use?	0.93	0.67
Q59.	Disruptive	How much of a problem… harassment/bullying among students.	1.11	0.79
Q60.	Behavior	How much of a problem… physical fighting between students?	1.14	0.81
Q61.		How much of a problem… disruptive student behavior?	1.19	0.85
Q62.		How much of a problem… racial/ethnic conflict among students?	1.02	0.73
Q63.		How much of a problem… depression/mental health problems?	0.93	0.66
Q64.		How much of a problem… lack of respect of staff by students?	1.15	0.82
Q65.		How much of a problem… cutting classes or being truant?	1.07	0.77
Q66.		How much of a problem… gang-related activity?	1.02	0.72
Q67.		How much of a problem… weapons possession?	1.04	0.74
Q68.		How much of a problem… vandalism (including graffiti)?	0.96	0.69
Q69.		How much of a problem… theft?	0.98	0.70

Notes: Analytic sample consists of 1,146 "other staff" members in comprehensive high schools who provided responses on the 2010-11 Cal-SCHLS staff survey.
  * Item dichotomized (1=yes, 0=no, not applicable).

Table 18. Latent factor correlations — Final CFA model (Model 11 – Other Staff)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Organizational supports	1.00						
(2) Staff relational supports	0.69	1.00					
(3) Resource provision	**0.81**	0.64	1.00				
(4) Professional Develop. needs	-0.21	-0.19	-0.22	1.00			
(5) Student supports	0.69	**0.89**	0.58	-0.18	1.00		
(7) Learning facilitative behaviors	0.50	0.48	0.44	-0.20	0.52	1.00	
(8) Student risk behavior	0.47	0.45	0.40	-0.19	0.47	0.65	1.00

Notes: Analytic sample consists of 378 administrators in comprehensive high schools who provided responses on the 2010-11 Cal-SCHLS staff survey. **Bolded** numbers indicate correlations of sufficient magnitude to suggest possible overlap of factors.

Section 2 Items – Health, Prevention, Discipline, Counseling, and Safety

We next turn to the analysis of the 21 items[7] administered to staff who had responsibilities for services or instruction related to health, prevention, discipline, counseling, and/or safety. Section 2 of the staff survey contains two item sets – one asking about respondent agreement concerning prevention/safety school practices, goals, and effectiveness of practices and another set asking about the implementation frequency of health or prevention services. Because these items were intended for staff with prevention/health responsibilities, we placed more weight on the responses of other staff and administrators than those of teachers because teachers were more likely to have inadvertently answered the questions in Section 2 even if they did not have prevention/health responsibilities. Although the analyses were conducted separately for other staff, administrators, and teachers – we present the results for all three groups together because the measurement structure of the items is fairly simple.

Exploratory Factor Analysis Results – Section 2

Table 19 presents goodness-of-fit information from the EFA models based on the Section 2 items for each sample. For each of the samples, the 4-factor model provided the best fit to the data, but an examination of the factor patterns did not reveal distinct, interpretable factors for the 4-factor solutions for all three samples. Nor was there an interpretable 3rd factor for the teacher sample. The results suggested that the 3-factor solution was suitable for the other staff and administrator sample and the 2-factor solution was appropriate for the teacher sample. The factor pattern and loadings for the preferred models are shown for each sample in Table 20. As shown, factors are apparent for: (1) health, prevention, and safety practices and goals; (2) health and prevention practices; and (3) stern discipline policies.[8]

---

[7] Item 22, "To what extent does this school provide services for students with disabilities or other special needs," was not omitted from the analyses because of the larger proportion of missing values.
[8] Item 8, "This school seeks to maintain a secure campus through such means as metal detectors, security guards, or personal searches," was not associated with any of the derived constructs. We suggest that this item be used a single indicator.

Table 19. Cal-SCHLS staff survey measures - goodness-of-fit information and eigenvalues for EFA models by sample (Section 2)

Model	RMSEA	CFI	TLI	SRMR	Eigenvalues
Other Staff					
1 Factor	0.111	0.895	0.884	0.078	8.966
2 Factor	0.087	0.944	0.930	0.052	1.632
3 Factor*	0.075	0.963	0.948	0.044	1.131
4 Factor	0.066	0.974	0.959	0.037	1.036
Administ.					
1 Factor	0.112	0.857	0.841	0.098	7.995
2 Factor	0.090	0.917	0.897	0.073	1.878
3 Factor*	0.079	0.943	0.920	0.060	1.532
4 Factor	0.065	0.966	0.946	0.047	1.183
Teachers					
1 Factor	0.141	0.868	0.853	0.090	9.707
2 Factor*	0.104	0.936	0.920	0.050	1.784
3 Factor	0.090	0.957	0.940	0.043	0.999
4 Factor	0.082	0.969	0.950	0.035	0.927

Notes: Analytic sample consists of 2,162 teachers, 304 administrators, and 844 other staff in comprehensive high schools who provided responses in Section 2 of the 2010-11 Cal-SCHLS staff survey.
* Preferred model.
RMSEA = Root Mean Square Error of Approximation (recommended value ≤0.06).
SRMR = Standardized Room Mean Square Residual (recommended value ≤0.06).
CFI = Comparative Fit Index (recommended value ≥ 0.95).
TLI = Tucker Lewis Index (recommended value ≥ 0.95).

Table 20. Cal-SCHLS Staff Survey EFA factor loadings by sample (Section 2)

Item	Item Description	Other Staff 1	2	3	Administrator 1	2	3	Teacher 1	2
s1.	This school collaborates well with community organizations to help...	**0.54**	0.00	0.22	**0.70**	-0.09	0.04	**0.59**	0.20
s2.	This school collaborates well with law enforcement organizations.	**0.59**	0.27	0.03	**0.41**	0.29	0.07	**0.65**	0.03
s3.	This school has sufficient resources to create a safe campus.	**0.81**	-0.05	-0.09	**0.63**	0.12	0.01	**0.79**	-0.05
s4.	This school has sufficient resources to address substance use prevent...	**0.81**	-0.24	0.00	**0.77**	-0.15	0.00	**0.75**	0.05
s5.	This school considers sanctions for student violations... case by case	**0.48**	0.13	0.12	**0.62**	0.21	-0.05	**0.68**	-0.01
s6.	This school punishes first–time violations… by out–of–school suspension.	**0.48**	**0.57**	-0.03	-0.01	**0.64**	0.38	**0.78**	-0.14
s7.	This school enforces zero tolerance policies.	**0.50**	**0.41**	0.12	0.03	**0.47**	0.38	**0.78**	-0.08
s8.	This school… metal detectors, security guards, or personal searches.	*Item dropped*			*Item dropped*			*Item dropped*	
s9.	…provides support/referral services (e.g., a Student Assistance Program).	**0.49**	0.11	0.26	**0.80**	0.06	-0.11	**0.60**	0.16
s10.	This school considers substance abuse prevention an important goal.	**0.39**	-0.02	0.40	**0.49**	0.01	0.25	**0.59**	0.27
s11.	This school provides adequate health services for students.	**0.36**	-0.07	0.28	**0.61**	-0.01	0.13	**0.48**	0.25
s12.	This school provides students with healthy food choices.	**0.30**	-0.01	0.26	**0.31**	0.02	0.38	**0.32**	0.31
s13.	This school emphasizes helping…social, emotional, and behave. problems.	**0.40**	0.19	0.42	**0.74**	-0.04	0.06	**0.54**	0.33
s14.	To what extent… foster youth development, resilience, asset promotion?	0.10	-0.07	**0.59**	0.30	-0.13	**0.36**	0.35	**0.42**
s15.	To what extent does this school provide nutritional instruction?	0.13	-0.16	**0.49**	0.13	-0.21	**0.50**	0.12	**0.60**
s16.	To what extent does this school provide… physical education and activity?	0.15	0.21	**0.34**	0.01	0.10	**0.44**	0.22	**0.30**
s17.	To what extent… provide alcohol or drug use prevention instruction?	0.01	-0.43	**0.85**	0.09	-0.45	**0.73**	0.00	**0.97**
s18.	To what extent does this school provide tobacco use prevention	-0.01	-0.42	**0.85**	-0.02	-0.45	**0.74**	-0.02	**0.95**
s19.	To what… provide conflict resolution or behavior manage. instruction?	-0.09	0.12	**0.81**	0.17	-0.01	**0.46**	0.26	**0.58**
s20.	To what extent does this school provide character education?	0.00	0.06	**0.80**	-0.04	0.02	**0.84**	0.25	**0.60**
s21.	To what extent … this school provide harassment or bullying prevention?	-0.03	0.00	**0.80**	-0.18	0.01	**0.97**	0.24	**0.60**

Notes: Analytic sample consists of 2,162 teachers, 304 administrators, and 844 other staff in comprehensive high schools who provided responses in Section 2 of the 2010-11 Cal-SCHLS staff survey.

Confirmatory Factor Analysis Results – Section 2

Table 21 shows goodness-of-fit information for the CFA models estimated using the items from Section 2. For all three samples, the 3-factor solution provided the best fit to the data. However, examination of the correlations between the factor for health/prevention/safety practices and goals and the factor for health and prevention practices exhibited too much overlap to be considered distinct factors. The correlations between these two factors ranged from 0.73 to 0.81. The test for discriminant validity indicated that these two factors did <u>not</u> adequately discriminate from each other. We therefore combined these two factors into one factor (model 2). We conclude that the 2-factor is preferred in terms of face validity, discriminant validity, and model fit.

Table 21. Cal-SCHLS measures - goodness-of-fit information for CFA Models (Section 2)

Model	RMSEA	CFI	TLI	WRMR
Other Staff				
Model 1 – 3 Factor model consistent with EFA	0.091	0.938	0.929	1.951
Model 2 – 2 Factor model (global vs. harsh)*	0.110	0.907	0.896	2.405
Model 3 – 1 Factor model	0.118	0.893	0.881	2.572
Administrators				
Model 1 – 3 Factor model consistent with EFA	0.086	0.925	0.914	1.317
Model 2 – 2 Factor model (global vs. harsh)*	0.111	0.874	0.859	1.651
Model 3 – 1 Factor model	0.117	0.859	0.843	1.739
Teachers				
Model 1 – 3 Factor model consistent with EFA	0.103	0.937	0.928	3.320
Model 2 – 2 Factor model (global vs. harsh)*	0.137	0.887	0.873	4.687
Model 3 – 1 Factor model	0.146	0.871	0.856	5.020

Notes: Analytic sample consists of staff in comprehensive high schools who provided responses on Section 2 of the 2010-11 Cal-SCHLS staff survey.
 * Preferred model.
 RMSEA = Root Mean Square Error of Approximation (recommended value ≤ 0.06).
 CFI = Comparative Fit Index (recommended value ≥ 0.95).
 TLI = Tucker Lewis Index (recommended value ≥ 0.95).
 WRMR = Weighted Root Mean Square Residual (recommended value of ≤ 1.0 or minimum value)

The estimated factor loadings and factor correlations from Model 2 are presented in Table 22. The factor pattern suggests that the Section 2 items measure two distinct factors: (1) health, prevention, discipline, and safety resources and (2) stern discipline policies. These two factors are moderately correlated, particularly for the teach subsample. Although the items in Section 2 appear to measure only two constructs, the items address a variety of content areas that are

likely to be of interest to practitioners. Continuation of dissemination of item-level descriptive statistics is therefore warranted.

Table 22. Final 2-factor CFA model – factor loadings – other staff, administrators, and teachers

Item	Construct	Construct and Associated Items	Other Staff Loadings	Standard Loadings	Administrators Loadings	Standard Loadings	Teachers Loadings	Standard Loadings
s1.	Health,	… collaborates well with community organizations to help...	1	0.68	1	0.67	1	0.69
s2.	Prevention,	… collaborates well with law enforcement organizations.	0.81	0.55	0.62	0.42	0.90	0.62
s3.	Discipline,	This school has sufficient resources to create a safe campus.	0.96	0.65	0.86	0.58	1.00	0.69
s4.	& Safety	… has sufficient resources address substance use prevent…	1.06	0.72	1.04	0.70	1.06	0.74
s5.	Resources	… considers sanctions for student violations... case by case	0.79	0.54	0.75	0.50	0.90	0.62
s9.		… (e.g., a Student Assistance Program).	1.00	0.68	0.95	0.64	0.97	0.67
s10.		… considers substance abuse prevention an important goal.	1.04	0.71	0.99	0.67	1.07	0.74
s11.		This school provides adequate health services for students.	0.85	0.58	1.00	0.67	0.92	0.63
s12.		This school provides students with healthy food choices.	0.73	0.50	0.92	0.62	0.78	0.54
s13.		… helping…social, emotional, and behave. problems.	1.08	0.73	1.07	0.72	1.09	0.75
s14.		… foster youth development, resilience, asset promotion?	0.94	0.64	0.90	0.60	0.96	0.66
s15.		… extent does this school provide nutritional instruction?	0.85	0.58	0.88	0.59	0.90	0.62
s16.		… school provide… physical education and activity?	0.66	0.45	0.60	0.41	0.63	0.44
s17.		… provide alcohol or drug use prevention instruction?	1.33	0.91	1.28	0.86	1.34	0.93
s18.		… extent does this school provide tobacco use prevention	1.31	0.89	1.16	0.78	1.31	0.91
s19.		… provide conflict resolution/behavior manage. instruction?	1.00	0.68	0.84	0.57	1.05	0.73
s20.		… extent does this school provide character education?	1.11	0.75	1.10	0.74	1.05	0.73
s21.		… this school provide harassment or bullying prevention?	1.07	0.73	1.10	0.74	1.04	0.72
s6.	Stern	… first–time violations… by out–of–school suspension.	1	0.62	1	0.64	1	0.80
s7.	Discipline Policies	This school enforces zero tolerance policies.	1.44	0.89	1.20	0.76	1.09	0.87
		Correlation between constructs	r=0.59		r=0.42		r=0.68	

Notes: Analytic sample consists of 2,162 teachers, 304 administrators, and 844 other staff in comprehensive high schools who provided responses in Section 2 of the 2010-11 Cal-SCHLS staff survey.

Reliability of derived Cal-SCHLS staff survey scales

We calculated internal consistency estimates of the scales using Cronbach's alpha coefficient for the teacher, administrator and other staff sample. These estimates are presented in Table 23. The derived scales demonstrate high levels of reliability, ranging from 0.76 to 0.95 for teachers, 0.52 to 0.95 for administrators, and 0.65 to 0.96. The organizational staff supports and student supports scales exhibit the highest reliability, with Cronbach alphas of 0.95/0.96. The stern discipline polices scale exhibits the lowest reliability, with Cronbach alphas ranging from 0.52 to 0.76. We recommend caution in using this scale in research. In sum, the internal consistency reliability estimates are of sufficient magnitude to support use of all of the derived scales in research, with the exception of the *stern discipline policies* scale.

Table 23. Internal consistency reliability coefficients by school grade and gender

	Teachers	Administrators	Other Staff
Section 1			
Organizational Staff and Student Supports			
Organizational supports	0.95	0.95	0.96
Staff Supports			
Staff relational supports	0.86	0.87	0.88
Resource provision	0.81	0.78	0.83
Professional Development needs	0.90	0.89	0.91
Student Supports			
Student supports	0.94	0.94	0.95
Perceptions of Learning-Related Behavior			
Learning facilitative behavior	0.80	0.77	0.84
Student risk behavior	0.91	0.87	0.92
Section 2			
Health, Prevention, Discipline, & Safety			
Health, prevention, discipline, & safety	0.92	0.89	0.92
Stern discipline policies	0.76	0.52	0.65

Summary

We conducted a series of factor analyses using items from Sections 1 and 2 of the Cal-SCHLS staff survey. The purpose of these analyses was to determine the measurement structure of the items included in the 2010-11 staff survey as implemented by the 351 comprehensive high schools that administered the survey. The results of the analyses suggest that the items analyzed can be used to represent 10 distinct summary measures of organizational-,staff-, and

student supports, staff perceptions of learning-related behavior, and health/prevention/safety resources (Table 23). The scales derived from the survey exhibit good internal consistency. We recommend continuing to investigate using these scales in future summary reports.

References

Fornell, C. & Larkcer, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18(1)*, 39-50.

Muthén, B.O. (1984). A general structural equation model with dichotomous, ordered, categorical, and continuous latent variable indicators. *Psychometrica*, *49*, 115–132.

Muthén, L.K. & Muthén, B.O. (2010). Mplus User's Guide. Sixth Edition. Los Angeles, CA: Muthén & Muthén

Yu, C.Y., & Muthén, B.O. (2001). *Evaluation of model fit indices for latent variable models with categorical and continuous outcomes* (Technical Report). Los Angeles: University of California, Los Angeles, Graduate School of Education and Information Studies.