SUPPLEMENTARY APPENDIX

for

School and Teacher Effects

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Tables S1 through S4 present results analogous to those in Tables 1 through 4, restricted to the 10-state saturated sample of schools in the HSLS, rather than the full national sample. For the results reported in these supplementary tables, we include fixed effects for states in the underlying regression models. The results in Tables S1-S4 demonstrate that the average within-state partial correlation coefficients are only slightly smaller in magnitude in nearly all cases of direct comparison to those in Tables 1 through 4. This result implies, even though it is based on an analysis of only 10 states, that the results in the main body of the chapter are not generated by suppression that is attributable to unspecified state-level differences. Most importantly, the pattern of teacher sorting in Tables 3 and 4 appears to be characteristic of within-state relationships as well.

Tables S5 and S6 offer alternatives to Tables 1, 2, S1, and S2, using measures of climate based on the responses of school administrators, rather than teachers. Although the scales are not identical, the results in Tables S5 and S6 are similar to those based on teacher reports, suggesting that teachers and school administrators view the learning climates in their schools much the same when predicted from the characteristics of student populations and available instructional resources.

Table S1. Within-State Partial Correlation Coefficients for Students' Socioeconomic Status and Algebra Test Scores in the Ninth Grade with Teachers' Reports of Resource Problems and Climate Problems

	Math Teacher		Science Teacher	
	Partial Correlation	Standard Error	Partial Correlation	Standard Error
School Mean of SES with				
Resources and facilities are a problem	-0.138	0.040	-0.083	0.045
Administrative support is a problem	-0.054	0.042	0.056	0.044
Student attitudes and behavior are a problem	-0.314	0.044	-0.272	0.042
Lack of parent support is a problem	-0.349	0.037	-0.337	0.043
Within-School SES with				
Resources and facilities are a problem	0.002	0.017	-0.021	0.018
Administrative support is a problem	0.025	0.019	-0.031	0.018
Student attitudes and behavior are a problem	-0.008	0.019	-0.015	0.018
Lack of parent support is a problem	-0.025	0.020	-0.040	0.020
School Mean of Algebra Test Score with				
Resources and facilities are a problem	-0.135	0.039	-0.118	0.048
Administrative support is a problem	-0.095	0.039	-0.041	0.042
Student attitudes and behavior are a problem	-0.401	0.039	-0.345	0.045
Lack of parent support is a problem	-0.355	0.040	-0.364	0.052
Within-School Algebra Test Score with	-0.005	0.023	-0.017	0.022
Resources and facilities are a problem	0.056	0.024	0.016	0.025
Administrative support is a problem	-0.024	0.022	-0.025	0.022
Student attitudes and behavior are a problem	-0.018	0.023	-0.024	0.023
Lack of parent support is a problem	-0.005	0.023	-0.017	0.022

Source: See Table 1.
Notes: See Table 2.

Table S2. Within-State Partial Correlation Coefficients for District-Level Per Pupil Expenditures with Teachers' Reports of Resource Problems and Climate Problems

	Math Teacher		Science Teacher	
	Partial Correlation	Standard Error	Partial Correlation	Standard Error
All Instructional Expenditures (per pupil) with				
Resources and facilities are a problem	-0.104	0.039	-0.130	0.047
Administrative support is a problem	-0.090	0.037	-0.056	0.068
Student attitudes and behavior are a problem	-0.005	0.048	-0.075	0.049
Lack of parent support is a problem	0.003	0.037	-0.138	0.059
All Instructional Expenditures (per pupil and cost-adjusted) with				
Resources and facilities are a problem	-0.068	0.046	-0.139	0.048
Administrative support is a problem	-0.108	0.044	-0.114	0.062
Student attitudes and behavior are a problem	-0.008	0.052	-0.092	0.052
Lack of parent support is a problem	0.016	0.044	-0.071	0.073
Instructional Salary Expenditures (per pupil) with				
Resources and facilities are a problem	-0.113	0.036	-0.132	0.048
Administrative support is a problem	-0.118	0.036	-0.033	0.053
Student attitudes and behavior are a problem	-0.009	0.041	-0.088	0.048
Lack of parent support is a problem	-0.010	0.036	-0.138	0.051
Instructional Salary Expenditures (per pupil and cost-adjusted) with				
Resources and facilities are a problem	-0.081	0.040	-0.139	0.052
Administrative support is a problem	-0.135	0.041	-0.096	0.059
Student attitudes and behavior are a problem	-0.008	0.047	-0.099	0.054
Lack of parent support is a problem	0.008	0.043	-0.063	0.062

Source: See Table 1.
Notes: See Table 2.

Table S3. Within-State Partial Correlation Coefficients for Students' Socioeconomic Status and Algebra Test Scores in the Ninth Grade with Teachers' Training and Experience

	Math Teacher		Science Teacher	
	Partial Correlation	Standard Error	Partial Correlation	Standard Error
School Mean of SES with				
Teacher has a graduate degree	0.093	0.041	0.067	0.046
Teacher is certified	0.007	0.046	0.082	0.054
Teacher is certified in math/science	0.023	0.047	0.076	0.053
Years since bachelor's degree	-0.004	0.039	0.056	0.050
Years at current school	-0.008	0.038	0.056	0.041
Years teaching math/science in high school	0.009	0.034	0.092	0.043
Within-School SES with				
Teacher has a graduate degree	0.021	0.018	0.040	0.018
Teacher is certified	0.029	0.022	0.018	0.019
Teacher is certified in math/science	0.041	0.022	0.028	0.019
Years since bachelor's degree	0.050	0.018	0.009	0.019
Years at current school	0.049	0.021	0.011	0.016
Years teaching math/science in high school	0.041	0.020	0.003	0.018
School Mean of Algebra Test Score with				
Teacher has a graduate degree	0.112	0.041	0.099	0.048
Teacher is certified	0.032	0.050	0.137	0.052
Teacher is certified in math/science	0.051	0.048	0.133	0.052
Years since bachelor's degree	0.005	0.040	0.113	0.054
Years at current school	0.030	0.034	0.068	0.038
Years teaching math/science in high school	0.032	0.032	0.085	0.039
Within-School Algebra Test Score with				
Teacher has a graduate degree	0.068	0.022	0.054	0.020
Teacher is certified	0.064	0.025	0.040	0.020
Teacher is certified in math/science	0.072	0.024	0.051	0.020
Years since bachelor's degree	0.079	0.023	0.031	0.022
Years at current school	0.100	0.025	0.056	0.019
Years teaching math/science in high school	0.102	0.025	0.029	0.021

Source: See Table 1.

Notes: The sample is limited to ten states for which the school samples are representative (but the identity of the specific states is only available to restricted-access HSLS:09 users). The standard errors are heteroskedasticity-consistent and are adjusted for the clustering of students within teachers. The partial correlation coefficients are adjusted for school type (whether the high school is a charter or magnet school) as well as state, and the data are weighted to the populations of ninth graders enrolled in math and science classes, respectively. Because of the inclusion of nine state dummies in the underling regression models, the partial correlations are interpretable as estimates of within-state relationships for the pooled ten-state sample.

Table S4. Within-State Partial Correlation Coefficients for District-Level Per Pupil Expenditures with Teachers' Training and Experience

	Math Teacher		Science Teacher	
	Partial Correlation	Standard Error	Partial Correlation	Standard Error
All Instructional Expenditures (per pupil) with				
Teacher has a graduate degree	0.050	0.037	-0.009	0.042
Teacher is certified	0.026	0.030	0.063	0.046
Teacher is certified in math/science	0.027	0.030	0.065	0.045
Years since bachelor's degree	0.090	0.035	0.048	0.048
Years at current school	0.011	0.034	0.016	0.042
Years teaching math/science in high school	0.005	0.033	0.011	0.043
All Instructional Expenditures (per pupil and cost-adjusted) with				
Teacher has a graduate degree	-0.040	0.037	-0.077	0.044
Teacher is certified	-0.004	0.040	0.037	0.055
Teacher is certified in math/science	0.000	0.106	0.037	0.054
Years since bachelor's degree	0.063	0.042	0.027	0.057
Years at current school	0.036	0.037	0.070	0.059
Years teaching math/science in high school	0.009	0.041	0.026	0.054
Instructional Salary Expenditures (per pupil) with				
Teacher has a graduate degree	0.081	0.035	0.024	0.040
Teacher is certified	0.016	0.030	0.087	0.047
Teacher is certified in math/science	0.020	0.030	0.088	0.046
Years since bachelor's degree	0.075	0.036	0.060	0.040
Years at current school	0.030	0.035	0.037	0.039
Years teaching math/science in high school	0.027	0.035	0.031	0.039
Instructional Salary Expenditures (per pupil and cost-adjusted) with				
Teacher has a graduate degree	-0.014	0.036	-0.062	0.048
Teacher is certified	-0.008	0.037	0.057	0.058
Teacher is certified in math/science	-0.003	0.036	0.056	0.057
Years since bachelor's degree	0.059	0.043	0.040	0.054
Years at current school	0.055	0.037	0.096	0.053
Years teaching math/science in high school	0.032	0.041	0.048	0.050

Source: See Table 1.
Notes: See Table 2.

Table S5. Partial Correlation Coefficients for Students' Socioeconomic Status, Algebra Test Scores, and District-Level Per Pupil Expenditures with School Administrators' Reports of Climate Problems

	Partial Correlation	Standard Error
School Mean of SES with		
Frequency of abuse and disrespect of teachers	-0.117	0.052
Frequency of other student deviance	-0.033	0.054
Student attitudes and behavior are a problem	-0.388	0.043
School Mean of Algebra Test Score with		
Frequency of abuse and disrespect of teachers	-0.162	0.055
Frequency of other student deviance	-0.036	0.059
Student attitudes and behavior are a problem	-0.366	0.045
All Instructional Expenditures (per pupil) with		
Frequency of abuse and disrespect of teachers	-0.025	0.063
Frequency of other student deviance	-0.150	0.045
Student attitudes and behavior are a problem	-0.009	0.059
All Instructional Expenditures (per pupil and cost-adjusted) with		
Frequency of abuse and disrespect of teachers	-0.043	0.062
Frequency of other student deviance	-0.219	0.051
Student attitudes and behavior are a problem	0.012	0.056
Instructional Salary Expenditures (per pupil) with		
Frequency of abuse and disrespect of teachers	0.002	0.059
Frequency of other student deviance	-0.148	0.047
Student attitudes and behavior are a problem	-0.029	0.058
Instructional Salary Expenditures (per pupil and cost-adjusted) with		
Frequency of abuse and disrespect of teachers	-0.020	0.058
Frequency of other student deviance	-0.222	0.055
Student attitudes and behavior are a problem	-0.006	0.055

Source: See Table 1.
Notes: See Table 1.

Table S6. Within-State Partial Correlation Coefficients for Students' Socioeconomic Status, Algebra Test Scores, and District-Level Per Pupil Expenditures with School Administrators' Reports of Climate Problems

	Partial Correlation	Standard Error
School Mean of SES with		
Frequency of abuse and disrespect of teachers	-0.244	0.081
Frequency of other student deviance	-0.054	0.074
Student attitudes and behavior are a problem	-0.383	0.059
School Mean of Algebra Test Score with		
Frequency of abuse and disrespect of teachers	-0.251	0.090
Frequency of other student deviance	-0.082	0.081
Student attitudes and behavior are a problem	-0.371	0.062
All Instructional Expenditures (per pupil) with		
Frequency of abuse and disrespect of teachers	0.019	0.083
Frequency of other student deviance	-0.021	0.087
Student attitudes and behavior are a problem	0.116	0.081
All Instructional Expenditures (per pupil and cost-adjusted) with		
Frequency of abuse and disrespect of teachers	-0.019	0.078
Frequency of other student deviance	-0.131	0.083
Student attitudes and behavior are a problem	0.131	0.090
Instructional Salary Expenditures (per pupil) with		
Frequency of abuse and disrespect of teachers	0.018	0.077
Frequency of other student deviance	-0.039	0.076
Student attitudes and behavior are a problem	0.084	0.073
Instructional Salary Expenditures (per pupil and cost-adjusted) with		
Frequency of abuse and disrespect of teachers	-0.021	0.072
Frequency of other student deviance	-0.154	0.079
Student attitudes and behavior are a problem	0.103	0.078

Source: See Table 1.
Notes: See Table 2.