



Indicators of school performance in Texas

Appendix A. Data and methods

Appendix B. Supporting tables

Appendix C. Supplemental analyses

See <https://ies.ed.gov/ncee/rel/Products/Publication/100919> for the full report.

Appendix A. Data and methods

This appendix describes the data sources, measures, sample, and methods used in the study.

Data sources

The study team used a combination of student- and teacher-level administrative data made available to the study team through the Texas Education Research Center at the University of Texas at Austin and publicly available school- and district-level data available from the Texas Education Agency (TEA) website (including data on student characteristics, attendance aggregated to the school level, and school accountability ratings) and the Common Core of Data (National Center for Education Statistics, n.d.). Data stored at the Texas Education Research Center includes all information from Texas public schools collected by TEA through the Public Education Information Management System data collection system. Because the state requires local education agencies to submit these records, systematic omissions and missing records were minimal. The study team used data from the information management system to construct school-level measures that are not available through public accountability reporting systems, such as attendance rates, disciplinary actions, student course enrollment and completion, and teacher turnover. Data elements and their sources are in table A1.

Table A1. Data elements and sources

Data source	Years	Key variables
School staffing records	2016/17-2020/21	Staff role; school of assignment; characteristics
Student demographic and enrollment files	2017/18-2019/20	Campus of enrollment
Student six-week attendance files	2017/18-2019/20	Attendance rates; chronic absenteeism
Student disciplinary records	2017/18-2019/20	Number and type of disciplinary incidents
Texas Academic Performance Reports	2017/18-2019/20	School percentage of students eligible for the National School Lunch Program; percentage of students in racial/ethnic groups; percentage of English learner students; percentage of students who received special education services; total student enrollment
Texas Academic Rating System	2016/17-2018/19	School accountability rating data
Texas Education Data Standards	2017/18-2019/20	Course credits data
Common Core of Data	2017/18-2019/20	District locale (city, suburb, town, or rural area); Title I status

Note: All data sources were used to answer the research questions.

Source: Authors' compilation.

Measures

Outcome measures. To address the research questions, the study team converted the school-level *A-F* accountability rating¹ into a dichotomous measure of a school's performance rating. Schools with an accountability rating of *A*, *B*, or *C* received a value of 1 (meeting accountability expectations). Schools with an accountability rating of *D* or *F* received a value of 0 (not meeting accountability expectations). This classification system was different from the system used by TEA, which classifies only those schools that receive an *F* as not meeting expectations. The study adopted a more liberal definition of meeting accountability expectations in response to TEA's interest in identifying schools that are not likely to meet expectations, which includes schools that received a rating of *D* or lower.

The study conducted supplemental analyses using as the outcome the untransformed overall accountability scale score, which is a weighted composite of three domain scores: student achievement, school progress, and closing the gaps. Domain scores are calculated based on the percentage of students who met grade-level academic expectations or demonstrated gains in achievement on the State of Texas Assessments of Academic Readiness. A composite scale score (also placed on a 100-point scale) is then computed, with weights being used to determine the magnitude of the contribution of different domain scores to the overall score. For high schools, the scores also incorporate graduation rates and the percentage of students who are college, career, or military ready. A weight of 0.7 is applied to the higher of the student achievement and the school progress domain score, and a weight of 0.3 is applied to the closing the gaps domain score.^{2,3,4}

Summary statistics for each outcome measure are in table A2.

¹ TEA's Accountability Rating System assigns each school a composite 0-100 overall score based on a school's domain-level scale scores and an *A-F* accountability rating. Schools receive an *A-F* accountability rating according to the following rubric: *A* (90-100), *B* (80-89), *C* (70-79), *D* (60-69), and *F* (<60).

² For schools for which a closing the gaps domain score was unavailable, the better of the student achievement or school progress domain score received a weight of 1.

³ The possible scale scores range for each accountability measure is 0-100, although the observed minimum and maximum scores vary by domain and school year.

⁴ The TEA Division of Performance Reporting's Accountability Manual includes a detailed description of the calculation. The 2019 manual is at https://tea.texas.gov/sites/default/files/Chapter%205%20Calculating%202019%20Ratings_adapted.pdf.

Table A2. Summary statistics for accountability outcome measures used in the study at Texas elementary, middle, and high schools, 2017/18 and 2018/19

Outcome measure	Year	Elementary schools			Middle schools			High schools		
		Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Overall accountability score	2017/18	79.59	30	99	80.17	34	99	81.95	34	99
	2018/19	79.96	40	99	80.72	48	99	85.70	51	99
Proportion of schools that meet accountability expectations (C or higher)	2017/18	.85	0	1	.86	0	1	.92	0	1
	2018/19	.85	0	1	.87	0	1	.98	0	1
Proportion of schools rated A	2017/18	.19	0	1	.20	0	1	.21	0	1
	2018/19	.20	0	1	.18	0	1	.30	0	1
Proportion of schools rated B	2017/18	.35	0	1	.36	0	1	.42	0	1
	2018/19	.36	0	1	.41	0	1	.54	0	1
Proportion of schools rated C	2017/18	.31	0	1	.30	0	1	.29	0	1
	2018/19	.29	0	1	.27	0	1	.14	0	1
Proportion of schools rated D	2017/18	.10	0	1	.10	0	1	.06	0	1
	2018/19	.10	0	1	.08	0	1	.02	0	1
Proportion of schools rated F	2017/18	.04	0	1	.04	0	1	.01	0	1
	2018/19	.05	0	1	.06	0	1	.00	0	1

Min is minimum. Max is maximum.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Predictors. The study team collected or derived school-level student and teacher predictors that would likely correlate with accountability scores, including predictors related to student attendance, discipline, course enrollment and completion, and teacher experience and turnover. Student behaviors that are meaningful predictors of school dropout in prior research were included. For example, literature on early warning indicator systems identifies student attendance, course failure, and discipline as indicators of students at risk of dropping out of high school (Allensworth & Easton, 2007; Balfanz et al., 2007). Teacher turnover and teacher experiences are associated with school quality and student performance (Adnot et al., 2017; Rice, 2003). A list of all the predictors examined in the study, grouped by performance domain, is in table A3.⁵

⁵ Student transcript data were available only for those students enrolled in grades 9-12.

Table A3. Covariates and predictors used in prediction models for Texas elementary, middle, and high schools

Covariate or predictor	School level	Definition	Purpose
Student characteristic			
Percentage Asian	All levels	Percentage of non-Hispanic Asian students	Covariate
Percentage Black	All levels	Percentage of non-Hispanic Black students	Covariate
Percentage Hispanic	All levels	Percentage of Hispanic students	Covariate
Percentage Native American	All levels	Percentage of non-Hispanic Native American students	Covariate
Percentage Pacific Islander	All levels	Percentage of non-Hispanic Pacific Islander students	Covariate
Percentage two or more races	All levels	Percentage of students who selected two or more races	Covariate
Percentage White	All levels	Percentage of non-Hispanic White students	Covariate
Percentage economically disadvantaged	All levels	Percentage of students eligible for the National School Lunch Program	Covariate
Percentage in special education	All levels	Percentage of students with an individualized education program and who receive special education services	Covariate
Percentage English learner students	All levels	Percentage of students classified as English learner students	Covariate
Total student enrollment	All levels	Number of students enrolled as of the accountability snapshot date	Covariate
Student attendance			
Student attendance rate	All levels	Percentage of enrolled days student was in attendance	Predictor
Chronic absenteeism rate	All levels	Percentage of students who were absent for more than 10 percent of days they were enrolled	Predictor
Course enrollment and completion			
Average number of course failures	High school	Number of course failures per student	Predictor
Percentage of students who failed at least one course	High school	Percentage of students who failed (earned an <i>F</i>) at least one course	Predictor
Percentage of students who completed at least one advanced course	High school	Percentage of students who completed at least one AP, IB, or dual-credit course	Predictor
Average number of credits completed by students in grade 9	High school (grade 9 only)	Average number of credits ^a completed by grade 9 students by the end of the school year	Predictor
Average number of advanced courses completed	High school	Average number of advanced courses completed (includes AP, IB, and dual credit)	Predictor
Student discipline			
Percentage of students with at least one in-school suspension	All levels	Percentage of students at a school who received one or more in-school suspensions	Predictor
Percentage of students with at least one out-of-school suspension	All levels	Percentage of students at a school who received one or more out-of-school suspensions	Predictor
Percentage of students with at least one expulsion	All levels	Percentage of students at a school who were expelled at least one time	Predictor
Percentage of students with two or more in-school or out-of-school suspensions	All levels	Percentage of students at a school who received two or more combined in-school or out-of-school suspensions	Predictor
Average number of in-school suspensions per student	All levels	Average number of in-school suspensions received by students enrolled at a school	Predictor
Average number of out-of-school suspensions per student	All levels	Average number of out-of-school suspensions received by students enrolled at a school	Predictor

Covariate or predictor	School level	Definition	Purpose
Average number of expulsions per student	All levels	Average number of expulsions received by students enrolled at a school	Predictor
Average number of in-school or out-of-school suspensions per student	All levels	Average number of combined in-school or out-of-school suspensions received by students enrolled at a school	Predictor
Teacher factor			
Average years of professional experience ^b	All levels	Average number of years of professional experience of teachers employed at a school	Predictor
Percentage of teachers with three or fewer years of professional experience	All levels	Percentage of teachers with three or fewer years of professional experience	Predictor
Percentage of teachers who continued teaching: prospective	All levels	Percentage of teachers at a school in the current school year who were teaching in a Texas public school in the subsequent school year	Predictor
Percentage of teachers who continued teaching: retrospective	All levels	Percentage of teachers at a school in the prior school year who were teaching in a Texas public school in the current school year	Predictor
Percentage of teachers who left the school: prospective	All levels	Percentage of teachers at a school in the current school year who were not employed at the same school in the subsequent school year	Predictor
Percentage of teachers who left the school: retrospective	All levels	Percentage of teachers at a school in the prior school year who were not employed at the same school in the current school year	Predictor
School characteristic			
City school	All levels	School located within a large, midsize, or small territory inside an urban area	Covariate
Suburban school	All levels	School located within a large, midsize, or small territory outside of a principal city but inside an urbanized area	Covariate
Town school	All levels	School located within a fringe, distant, or remote territory inside an urban cluster	Covariate
Rural school	All levels	School located within a fringe, distant, or remote census-defined rural territory	Covariate
Title I participation	All levels	Indicator for whether school received Title I, Part A federal funds	Covariate

AP is Advanced Placement. IB is International Baccalaureate.

a. The number of credit hours available for a course came from the C022 Texas Education Data Standards tables published annually on the Texas Student Data System website.

b. Teachers' years of professional experience included professional experience in U.S. public schools (including charter schools); regional education service centers; state departments of education; Texas colleges or universities; and other government-related organizations, such as the U.S. military and Peace Corps.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Sample

The sample for all three research questions included regular instructional schools rated under the state accountability system in 2017/18, 2018/19, and 2019/20. Schools rated under the Alternative Education Accountability system—for example, alternative education schools for students removed from regular education settings because of behavioral infractions—were excluded from the sample. Furthermore, in 2017/18 and 2018/19, the study team excluded schools not assigned an accountability rating.⁶

⁶ Eligible schools may not have received an accountability rating for a variety of reasons, including the suspension of ratings during a natural disaster that impacted schools in a given geographic region.

TEA categorizes schools into one of four levels based on the grade levels served: elementary schools, middle schools, high schools, and elementary/secondary schools. The study team collapsed these four groups into three school levels (elementary, middle, and high). Schools that served grades spanning multiple school levels—for example, K-8, which includes both elementary grades (K-5) and middle grades (6-8)—were included in both the elementary and middle school samples. This rule impacted 398 unique schools across all three study years. The number of unique schools, within year and school level, is in table A4.

Table A4. Number of Texas schools, by school level and year

School level	2017/18	2018/19	2019/20
Elementary	4,940	4,992	5,035
Middle	1,993	2,005	2,037
High	1,614	1,633	1,654

Note: Within school years, school counts are unduplicated within school level. Schools with hybrid grade ranges (for example, schools spanning grades K-12) are counted in each applicable school level. Thus, the total number of schools within each school year exceeds the unique number of schools reported in other sources.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Sample characteristics

The characteristics of Texas public schools and their accountability performance in 2017/18 and 2018/19 are in tables A5 and A6.

Table A5. Characteristics of Texas elementary, middle, and high schools that met accountability expectations or did not meet accountability expectations, 2017/18

Characteristic	Elementary schools		Middle schools		High schools	
	A-C rating	D-F rating	A-C rating	D-F rating	A-C rating	D-F rating
Student characteristic						
Percentage Asian	4.1	1.1	3.4	1.0	2.9	0.9
Percentage Black	11.4	15.1	10.0*	15.4*	8.8*	18.2*
Percentage Hispanic	51.4	56.4	48.4*	56.1*	45.7*	54.2*
Percentage Native American	0.4	0.4	0.4	0.3	0.4	0.3
Percentage Pacific Islander	0.1	0.1	0.1	0.1	0.1	0.1
Percentage two or more races	2.5	2.2	2.2	1.7	2.0	1.6
Percentage White	30.1*	24.7*	35.5*	25.4*	40.1*	24.7*
Percentage economically disadvantaged	62.1*	75.7*	57.5*	72.1*	53.0*	69.7*
Percentage in special education	9.1	8.9	9.7	11.1	8.7	10.6
Percentage English learner students	24.1	22.3	13.3	15.8	7.3	11.2
Average total student enrollment	549	505	656	589	990	1,027
Student attendance						
Student attendance rate	95.5	94.8	95.5	94.0	94.4	91.8
Chronic absenteeism rate	9.3	12.6	9.1	15.6	13.5	23.6
Course enrollment and completion						
Average number of course failures	na	na	0.3	0.5	0.5	0.8
Percentage of students who failed at least one course	na	na	15.0*	23.1*	20.7*	30.9*
Percentage of students who completed at least one advanced course	na	na	33.4*	13.1*	32.1*	18.9*
Average number of credits completed by students in grade 9	na	na	6.6	6.1	6.5	5.9
Average number of advanced courses completed	na	na	0.8	0.2	0.8	0.4
Student discipline						
Percentage of students with at least one in-school suspension	2.8	4.6	11.9	16.3	10.1	13.7
Percentage of students with at least one out-of-school suspension	0.9	1.7	4.5	9.2	3.1	6.7
Percentage of students with at least one expulsion	0.1	0.3	1.6	2.8	2.0	2.8
Percentage of students with two or more in-school or out-of-school suspensions	1.3	2.3	6.3	10.6	4.8	7.9
Average number of in-school suspensions per student	0.1	0.1	0.3	0.4	0.2	0.3
Average number of out-of-school suspensions per student	0.0	0.0	0.1	0.2	0.0	0.1
Average number of expulsions per student	0.0	0.0	0.0	0.0	0.0	0.0
Average number of in-school or out-of-school suspensions per student	0.1	0.1	0.3	0.6	0.2	0.4
Teacher factor						
Average years of professional experience	11.0	10.1	10.5	9.4	11.7	10.7
Percentage of teachers with three or fewer years of professional experience	24.7*	31.9*	29.8*	36.8*	26.3*	32.8*
Percentage of teachers who continued teaching: prospective	91.9	90.2	90.5	88.6	90.1	88.4

Characteristic	Elementary schools		Middle schools		High schools	
	A-C rating	D-F rating	A-C rating	D-F rating	A-C rating	D-F rating
Percentage of teachers who continued teaching: retrospective	90.7	87.2	88.4*	83.1*	89.1	84.5
Percentage of teachers who left the school: prospective	20.6*	28.9*	26.4*	34.7*	23.6*	30.6*
Percentage of teachers who left the school: retrospective	13.2	17.0	16.9*	23.4*	17.2	19.1
Accountability rating						
Overall accountability scores	82.8*	63.0*	83.2*	63.0*	83.7*	64.6*
School characteristic						
City school	.4	.4	.3	.4	.3	.3
Suburban school	.3	.2	.3	.1	.2	.1
Town school	.1	.2	.1	.2	.1	.1
Rural school	.2	.2	.3	.3	.4	.4
Title I status	.8	1.0	.8	1.0	.8	1.0

* denotes differences of 5 percentage points or more between schools receiving A-C ratings and schools receiving D-F ratings.

na is not applicable because the measure was not available for these grade levels.

Note: The study defines schools that meet accountability expectations as those that received a rating of C or higher.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Table A6. Characteristics of Texas elementary, middle, and high schools that met accountability expectations or did not meet accountability expectations, 2018/19

Characteristic	Elementary schools		Middle schools		High schools	
	A-C rating	D-F rating	A-C rating	D-F rating	A-C rating	D-F rating
Student characteristic						
Percentage Asian	4.1	1.1	3.5	0.8	2.9	0.5
Percentage Black	11.3*	17.5*	10.3*	16.2*	9.4*	26.5*
Percentage Hispanic	52.1	54.7	48.3*	60.7*	47.2	50.5
Percentage Native American	0.4	0.3	0.4	0.3	0.4	0.3
Percentage Pacific Islander	0.1	0.1	0.1	0.1	0.1	0.1
Percentage two or more races	2.6	2.4	2.4	1.6	2.0	1.9
Percentage White	29.4*	23.7*	35.1*	20.1*	38.0*	20.2*
Percentage economically disadvantaged	64.0*	78.8*	59.1*	76.6*	56.2*	70.3*
Percentage in special education	9.9	9.8	10.1	11.7	9.1	10.9
Percentage English learner students	24.6	21.9	14.4*	19.9*	8.7*	15.9*
Total student enrollment	547.1	479.6	665.1	626.8	1,007.9	750.7
Student attendance						
Student attendance rate	95.5	94.6	95.6	93.8	94.3	91.2
Chronic absenteeism rate	9.3	13.4	9.1*	16.4*	14.0*	24.9*
Course enrollment and completion						
Average number of course failures	na	na	0.3	0.5	0.5	1.0
Percentage of students who failed at least one course	na	na	17.0*	23.0*	21.8*	34.8*
Percentage of students who completed at least one advanced course	na	na	35.2*	9.7*	33.3*	12.9*
Average number of credits completed in grade 9	na	na	6.7	6.2	6.6	6.2
Average number of advanced courses completed	na	na	0.9	0.2	0.9	0.3
Student discipline						
Percentage of students with at least one in-school suspension	2.9	4.7	12.2*	19.1*	10.8	13.7
Percentage of students with at least one out-of-school suspension	0.9	1.9	4.8*	11.9*	3.6*	9.9*
Percentage of students with at least one expulsion	0.1	0.3	1.7	3.5	2.2	3.0
Percentage of students with two or more in-school or out-of-school suspensions	1.3	2.5	6.5*	13.2*	5.3	10.0
Average number of in-school suspensions per student	0.1	0.1	0.3	0.5	0.2	0.4
Average number of out-of-school suspensions per student	0.0	0.0	0.1	0.2	0.1	0.2
Average number of expulsions per student	0.0	0.0	0.0	0.0	0.0	0.0
Average number of in-school or out-of-school suspensions per student	0.1	0.1	0.3	0.7	0.3	0.5
Teacher factor						
Average years of professional experience	11.3	10.0	10.6	9.3	11.8	8.5
Percentage of teachers with three or fewer years of professional experience	23.1*	31.4*	28.8*	35.7*	25.4*	42.4*
Percentage of teachers who continued teaching: prospective	91.2	89.1	89.6	87.7	89.4*	83.2*
Percentage of teachers who continued teaching: retrospective	91.8	88.1	89.1	85.9	90.1*	81.0*

Characteristic	Elementary schools		Middle schools		High schools	
	A-C rating	D-F rating	A-C rating	D-F rating	A-C rating	D-F rating
Percentage of teachers who left the school: prospective	20.9*	31.0*	25.2*	34.5*	23.3*	38.1*
Percentage of teachers who left the school: retrospective	14.0*	19.2*	19.3	22.3	17.2*	31.1*
Accountability ratings						
Overall accountability scores	83.2*	61.7*	83.7*	61.1*	86.2*	65.2*
School characteristic						
City school	.4	.4	.3	.4	.3	.4
Suburban school	.3	.1	.3	.1	.2	.2
Town school	.1	.2	.1	.2	.1	.0
Rural school	.2	.2	.3	.3	.4	.3
Title I status	.8	1.0	.8	1.0	.8	.9

* denotes differences of 5 percentage points or more between schools receiving A-C ratings and schools receiving D-F ratings.

na is not applicable because the measure was not available for these grade levels.

Note: The study defines schools that meet accountability expectations as those that received a rating of C or higher.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Methods for addressing the research questions

Research question 1. To answer the first research question, the study team identified predictors that were most strongly associated with the dichotomous outcome measure (likelihood of meeting accountability expectations). Given the large number of correlated predictors, the study team used regression-based penalization methods called elastic-net regression to perform variable selection (Zou & Hastie, 2005). Elastic-net regression is an extension of multivariate regression that is well suited for models with high levels of multicollinearity (Greenwood et al., 2020). It has several advantages over other methods of variable selection (such as stepwise regression), including improved handling of collinearity, reduced bias in the estimated coefficients, and less sensitivity to the order in which coefficients are entered in the functional form. The elastic-net regression method also has improved performance compared with other penalization methods, such as least absolute shrinkage and selection operator (LASSO) and ridge regression in the presence of several highly correlated predictors (Zou & Hastie, 2005).

Penalized regression models, such as elastic-net regression, perform variable selection by applying increasingly large “penalties” to regression coefficients to guard against overfitting—that is, the risk that the prediction model will perform poorly in a different sample or school year. The size of the penalty parameter (λ) is determined through a function that minimizes the regression residual sum of squares and the penalty term multiplied by the model coefficients. When λ is set to 0, the coefficients resemble the standardized coefficients estimated by ordinary least squares; as λ increases, the coefficients of covariates weakly correlated with the outcome are increasingly shrunk to 0. The value of the penalization parameters was selected using 10-fold cross-validation. An additional advantage of the elastic-net regression method is that it blends the optimization features of both the LASSO and ridge regression methods, calculating the optimal penalty by balancing the ridge and LASSO penalty calculations.⁷ The complete model output from elastic-net regression models is in appendix B.⁸

For research question 1, the study team fit elastic-net regressions using a dichotomized version of the accountability outcome variable, predicting the log odds that a school was likely to meet accountability expectations (received an A, B, or C on the A-F accountability rating system and coded as “1”) or not likely to meet

⁷ Model training and tuning were performed with the R “caret” (version 4.0-2) and “glmnet” (version 6.0-86) packages.

⁸ Output from the nonpenalization methods, such as ordinary least squares and logistic regressions, is in appendix C.

accountability expectations (received a *D* or *F* and coded as “0”). The research team analyzed predictor coefficients that had a nonzero coefficient in research questions 2 and 3.

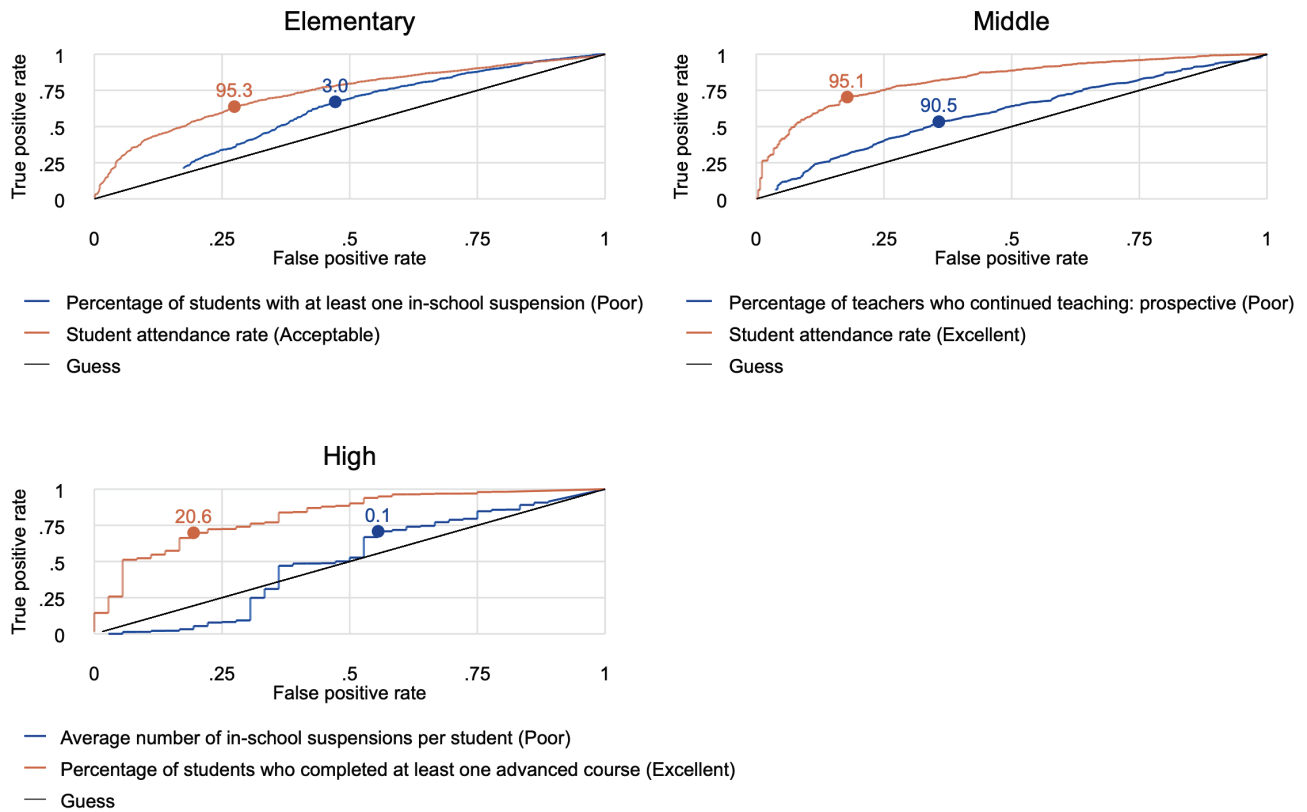
To supplement research question 1, the study team fit elastic-net regressions predicting schools’ overall accountability scores (on a scale of 0-100) by school level and year. To facilitate interpretation between school levels, the study team scaled the overall accountability score by subtracting out the school-level mean and dividing by the school-level standard deviation. Findings for this supplemental analysis are in appendix C. These analyses provide additional information about student behaviors and teacher factors associated with the underlying scale scores used to construct accountability ratings and how they varied by school year and school level.

Research question 2. The study team fit a series of logistic regression models for each predictor with a nonzero coefficient obtained through the elastic-net regression models estimated to address research question 1. The objective of this analysis was to identify the optimal value of the continuous predictor—or cutpoint—that would be used to construct binary transformations of these indicators to predict whether schools were likely to meet accountability expectations. Specifically, the study team generated receiver operator characteristic curves, which visualize the tradeoff between the false positive rate (that is, the percentage of schools not meeting accountability expectations incorrectly classified as meeting accountability expectations) and the true positive rate (that is, the percentage of schools that met accountability expectations correctly classified as meeting accountability expectations). The optimal cutpoint was determined by calculating the area under the curve (AUC) and the Youden’s *J* statistic.⁹ The AUC balances the risk of the prediction model misclassifying a school not meeting accountability expectations as meeting accountability expectations with correctly classifying a school that met accountability expectations as meeting accountability expectations (Zou et al., 2007). This statistic summarizes the diagnostic performance of a single indicator; the Youden’s *J* statistic is used to select the cutpoint for a given indicator that maximizes true positives while minimizing false positives. Traditionally, an AUC statistic greater than .5 (which is equivalent to a random guess) is required for a predictor to be considered effective at separating schools meeting accountability expectations from schools that are not meeting accountability expectations. In this study, an AUC of .9 or higher is considered to provide outstanding discrimination; greater than or equal to .8 but below .9 is considered to provide excellent discrimination; greater than or equal to .7 but below .8 is considered to provide acceptable discrimination; and below .7 is considered to provide poor discrimination (Hosmer et al., 2013).

Figure A1 illustrates the relationship between the AUC statistic and Youden’s *J* statistic for two indicators in each school level during the 2018/19 school year. The study team chose the two indicators purposefully. Within each school level, one indicator exhibited the worst diagnostic performance (that is, the lowest AUC statistic), and the other exhibited the best diagnostic performance (or, the highest AUC statistic). Visually, the AUC summarizes the difference between the solid blue and orange lines (that is, the estimated true positive rate and the false positive rate for an incremental value of a continuous predictor, which is the receiver operator characteristic curve) and the diagonal solid black line, which is equivalent to a guess. Receiver operator characteristic curves that align closely to this solid line describe indicators that provide limited diagnostic value and are roughly equivalent to a flipping a coin to predict whether a school met accountability expectations or did not meet accountability expectations, whereas receiver operator characteristic curves that deviate sharply (resembling a bow shape) generally provide superior diagnostic performance. These patterns are evident in figure A1; indicators classified as having excellent discrimination quality—such as student attendance rate in middle schools—provide more separation from the diagonal chance line than those with poor discrimination quality, such as the percentage of teachers who remain teaching.

⁹The study team calculated Youden’s *J* statistic to identify the optimal cutpoint that maximized the AUC. The optimization was performed using the “cutpointR” R package version 1.0.32.

Figure A1. Receiver operator characteristic curves, Texas elementary, middle, and high schools, 2018/19



Note: The area under the curve (AUC) classifications are in parentheses in each legend. An AUC of .9 or higher is considered to provide outstanding discrimination; greater than or equal to .8 but below .9 is considered to provide excellent discrimination; greater than or equal to .7 but below .8 is considered to provide acceptable discrimination; and below .7 is considered to provide poor discrimination (Hosmer et al., 2013). Labels in each data series denote the cutpoint that maximizes the Youden’s J statistic.

Source: Authors’ analyses based on data provided by the Texas Education Agency.

Research question 3. For research question 3 examining the indicator classification consistency before and during the pandemic, the study team used indicators developed in research question 2 to identify schools that were and were not likely to meet accountability expectations in 2017/18, 2018/19, and 2019/20. For the indicators with acceptable or better discrimination quality (measured by the AUC statistic) in each school level, the study described the percentages of schools above the cutpoints for those indicators in each year. Next the study team assigned one of four categories to each school based on their 2018/19 and 2019/20 ratings: meeting accountability expectations in both years, meeting accountability expectations in the current year only, meeting accountability expectations in the prior year only, and not meeting accountability expectations in either year. The study team described the percentages of schools in each category to provide information about the consistency of ratings across years.

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Appendix B. Supporting tables

This appendix provides the full analysis results that support the findings in the main report.

- Tables B1 and B2 provide the full elastic-net results for research question 1, focused on predictors of the likelihood of Texas schools meeting accountability expectations (rating *C* or higher) in 2017/18 and 2018/19.
- Table B3 replicates table 2 from the main report displaying area under the curve (AUC) values for the research question 2 results.
- Tables B4 and B5 provide the bivariate Pearson correlation coefficients that summarize the strength and direction of the relationship between the predictors and a school's overall accountability rating for 2017/18 and 2018/19, respectively.
- Table B6 displays the percentage of schools above indicator cutpoints by school level and school year for indicators with acceptable or excellent discrimination quality.
- Tables B7, B8, and B9 provide the percentage of schools classified as not meeting accountability expectations for multiple, single, or no school years in 2018/19 and 2019/20 using the selected indicator cutpoints.

Table B1. Coefficients estimated from elastic-net logistic regression predicting whether Texas schools earned an accountability rating of C or higher, 2017/18

Covariate or predictor	Elementary schools	Middle schools	High schools
	Coefficient	Coefficient	Coefficient
Student characteristic			
Percentage Asian	.00	.17	.13
Percentage Black	.00	-.08	-.21
Percentage Hispanic	.00	.00	.00
Percentage Native American	.00	-.02	.00
Percentage Pacific Islander	.00	.04	.00
Percentage two or more races	.00	.06	.00
Percentage White	.00	.00	.00
Percentage economically disadvantaged	-.04	.00	-.27
Percentage in special education	.00	-.15	-.11
Percentage English learner students	.00	.00	.00
Total student enrollment	.00	.06	.04
Student attendance			
Student attendance rate	.11	.33	.20
Chronic absenteeism rate	-.05	-.36	-.52
Course enrollment and completion			
Average number of course failures	na	na	.00
Percentage of students who failed at least one course	na	na	-.10
Percentage of students who completed at least one advanced course	na	na	.37
Average number of credits completed by students in grade 9	na	na	.10
Average number of advanced courses students completed	na	na	.55
Student discipline			
Percentage of students with at least one in-school suspension	.00	.00	.00
Percentage of students with at least one out-of-school suspension	-.01	-.09	.00
Percentage of students with at least one expulsion	.00	-.01	.02
Percentage of students with two or more in-school or out-of-school suspensions	-.09	-.09	.00
Average number of in-school suspensions per student	.00	-.03	.00
Average number of out-of-school suspensions per student	.00	-.00	-.05
Average number of expulsions per student	.00	-.14	.00
Average number of in-school or out-of-school suspensions per student	-.00	-.04	.00
Teacher factor			
Average years of professional experience	.00	.06	.00
Percentage of teachers with three or fewer years of professional experience	.00	-.06	-.14
Percentage of teachers who continued teaching: prospective	.00	.03	.00
Percentage of teachers who continued teaching: retrospective	.00	.14	.19
Percentage of teachers who left the school: prospective	-.13	-.16	-.10
Percentage of teachers who left the school: retrospective	.00	-.21	.00
School characteristic			
City school	.00	.09	.08
Suburban school	.00	.05	.00
Town school	.00	-.04	.00
Rural school	.00	-.13	-.10

Covariate or predictor	Elementary schools	Middle schools	High schools
	Coefficient	Coefficient	Coefficient
Title I status	-.00	-.17	-.00
Statistic			
Kappa	.00	.25	.19
Nagelkerke adjusted R^2	.22	.07	.37
Akaike information criterion	3,488.19	1,558.04	682.83
Number of observations	4,783	1,947	1,556

na is not applicable because the measure was not available for these grade levels.

Note: The study defines schools that met accountability expectations as those that received a rating of C or higher.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Table B2. Coefficients estimated from elastic-net logistic regression predicting whether Texas schools earned an accountability rating of C or higher, 2018/19

Covariate or predictor	Elementary schools	Middle schools	High schools
	Coefficient	Coefficient	Coefficient
Student characteristic			
Percentage Asian	.06	.05	.22
Percentage Black	.00	.00	-.21
Percentage Hispanic	.00	.00	.02
Percentage Native American	.00	.00	.03
Percentage Pacific Islander	.00	.00	.05
Percentage two or more races	.00	.00	.00
Percentage White	.00	.00	.00
Percentage economically disadvantaged	-.14	.00	.10
Percentage in special education	.00	-.12	-.10
Percentage English learner students	.04	-.09	-.16
Total student enrollment	.01	.00	.24
Student attendance			
Student attendance rate	.23	.38	.24
Chronic absenteeism rate	-.09	-.22	-.28
Course enrollment and completion			
Average number of course failures	na	na	-.22
Percentage of students who failed at least one course	na	na	-.03
Percentage of students who completed at least one advanced course	na	na	.67
Average number of credits completed by students in grade 9	na	na	.12
Average number of advanced courses students completed	na	na	.40
Student discipline			
Percentage of students with at least one in-school suspension	-.08	-.01	.13
Percentage of students with at least one out-of-school suspension	-.03	-.10	.00
Percentage of students with at least one expulsion	.00	-.10	-.06
Percentage of students with two or more in-school or out-of-school suspensions	-.08	-.21	-.03
Average number of in-school suspensions per student	.00	.00	-.09
Average number of out-of-school suspensions per student	-.06	-.02	-.02
Average number of expulsions per student	-.00	-.09	.00
Average number of in-school or out-of-school suspensions per student	-.03	-.08	-.10
Teacher factor			
Average years of professional experience	.00	.00	.20
Percentage of teachers with three or fewer years of professional experience	-.14	-.09	-.19
Percentage of teachers who continued teaching: prospective	.00	.00	.12
Percentage of teachers who continued teaching: retrospective	.06	.03	.29
Percentage of teachers who left the school: prospective	-.25	-.27	-.23
Percentage of teachers who left the school: retrospective	-.03	-.00	-.15

Covariate or predictor	Elementary schools	Middle schools	High schools
	Coefficient	Coefficient	Coefficient
School characteristic			
City school	.00	.00	.13
Suburban school	.12	.02	-.07
Town school	-.06	-.05	.15
Rural school	.00	-.00	-.14
Title I status	-.13	-.01	.00
Statistic			
Kappa	.09	.29	.25
Nagelkerke adjusted R^2	.25	.39	.10
Akaike information criterion	3,440.19	1,146.72	378.21
Number of observations	4,872	1,978	1,578

na is not applicable because the measure was not available for these grade levels.

Note: The study defines schools that met accountability expectations as those that received a rating of C or higher.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Table B3. Discrimination quality and cutpoint values of indicators of Texas schools' classified as meeting accountability expectations, by school level, 2018/19

Indicator	Elementary schools		Middle schools		High schools	
	Cutpoint	Discrimination quality (AUC)	Cutpoint	Discrimination quality (AUC)	Cutpoint	Discrimination quality (AUC)
Student attendance						
Student attendance rate	95.3	.73	95.1	.82	92.8	.73
Chronic absenteeism rate	10.1	.72	11.2	.82	14.0	.74
Course enrollment and completion						
Average number of course failures	na	na	na	na	0.6	.72
Percentage of students who failed at least one course	na	na	na	na	27.2	.73
Percentage of students who completed at least one advanced course	na	na	na	na	20.6	.81
Average number of credits completed by students in grade 9	na	na	na	na	6.3	.68
Average number of advanced courses completed	na	na	na	na	0.4	.83
Student discipline						
Percentage of students with at least one in-school suspension	3.0	.60	14.1	.69	–	–
Percentage of students with at least one out-of-school suspension	1.2	.63	7.1	.74	–	–
Percentage of students with at least one expulsion	–	–	2.1	.74	1.7	.57
Percentage of students with two or more in-school or out-of-school suspensions	1.2	.65	9.6	.75	8.6	.63
Average number of in-school suspensions per student	–	–	–	–	0.1	.50
Average number of out-of-school suspensions per student	0.0	.63	0.1	.73	0.1	.69
Average number of in-school or out-of-school suspensions per student	0.0	.65	0.4	.75	0.4	.61
Teacher factor						
Average years of professional experience	–	–	–	–	12.0	.73
Percentage of teachers with three or fewer years of professional experience	24.6	.66	27.5	.65	28.5	.76
Percentage of teachers who continued teaching: prospective	–	–	–	–	90.3	.65

Indicator	Elementary schools		Middle schools		High schools	
	Cutpoint	Discrimination quality (AUC)	Cutpoint	Discrimination quality (AUC)	Cutpoint	Discrimination quality (AUC)
Percentage of teachers who continued teaching: retrospective	91.5	.63	90.7	.62	86.1	.74
Percentage of teachers who left the school: prospective	22.8	.70 ^a	23.9	.71	26.7	.77
Percentage of teachers who left the school: retrospective	14.0	.61	16.9	.61	24.6	.65

– Denotes predictors not associated with the likelihood of accountability expectations. AUC is area under the curve. na is not applicable because the measure was not available for these grade levels.

Note: An AUC of .9 or higher provides outstanding discrimination; greater than or equal to .8 but below .9 provides excellent discrimination; greater than or equal to .7 but below .8 provides acceptable discrimination; and below .7 provides poor discrimination (Hosmer et al., 2013). The table includes indicators chosen because they have a nonzero association with a school’s likelihood of meeting accountability expectations. The study defines schools that met accountability expectations as those that received a rating of C or higher.

a. With rounding, the AUC appears as .70, which is in the acceptable range. The actual AUC is less than .70 and therefore is categorized as poor.

Source: Authors’ analyses based on data provided by the Texas Education Agency.

Table B4. Correlations between covariates or predictors and accountability score for Texas elementary, middle, and high schools, 2017/18

Covariate or predictor	Elementary	Middle	High	Combined
	Correlation (<i>r</i>)	Correlation (<i>r</i>)	Correlation (<i>r</i>)	Correlation (<i>r</i>)
Student characteristic				
Percentage Asian	0.21	0.22	0.29	0.29
Percentage Black	-0.32	-0.22	-0.24	-0.24
Percentage Hispanic	-0.14	0.15	-0.13	-0.12
Percentage Native American	-0.06	-0.06	0.00	0.01
Percentage Pacific Islander	-0.04	0.00	-0.03	0.00
Percentage two or more races	-0.15	-0.14	0.10	0.11
Percentage White	0.24	-0.09	0.17	0.16
Percentage economically disadvantaged	-0.44	-0.24	-0.42	-0.41
Percentage in special education	-0.36	-0.45	-0.50	-0.50
Percentage English learner students	-0.10	0.08	-0.22	-0.21
Total student enrollment	0.06	0.23	-0.01	-0.01
Student attendance				
Chronic absenteeism rate	-0.43	-0.57	-0.63	-0.63
Student attendance rate	0.42	0.57	0.61	0.62
Course enrollment and completion				
Average number of course failures	-0.04	-0.13	-0.36	-0.35
Percentage of students who failed at least one course	-0.19	-0.19	-0.38	-0.37
Percentage of students who completed at least one advanced course	0.42	0.49	0.52	0.51
Average number of credits completed by students in grade 9	0.08	0.14	0.24	0.24
Average number of advanced courses students completed	0.41	0.45	0.50	0.49
Student discipline				
Percentage of students with at least one in-school suspension	-0.24	-0.20	-0.37	-0.35
Percentage of students with at least one out-of-school suspension	-0.19	-0.17	-0.40	-0.40
Percentage of students with at least one expulsion	-0.18	-0.20	-0.37	-0.37
Percentage of students with two or more in-school or out-of-school suspensions	-0.28	-0.19	-0.41	-0.40
Average number of in-school suspensions per student	-0.26	-0.11	-0.32	-0.30
Average number of out-of-school suspensions per student	-0.21	-0.18	-0.38	-0.38
Average number of expulsions per student	-0.18	-0.20	-0.36	-0.36
Average number of in-school or out-of-school suspensions per student	-0.28	-0.14	-0.39	-0.36
Teacher factor				
Average years of professional experience	0.13	-0.10	0.07	0.06
Percentage of teachers with three or fewer years of professional experience	-0.24	0.04	-0.15	-0.13

Covariate or predictor	Elementary	Middle	High	Combined
	Correlation (<i>r</i>)	Correlation (<i>r</i>)	Correlation (<i>r</i>)	Correlation (<i>r</i>)
Percentage of teachers who continued teaching: prospective	0.34	0.25	0.12	0.12
Percentage of teachers who continued teaching: retrospective	0.44	0.23	0.24	0.23
Percentage of teachers who left the school: prospective	-0.38	-0.35	-0.23	-0.23
Percentage of teachers who left the school: retrospective	-0.29	-0.25	-0.15	-0.14
School characteristic				
City school	0.02	0.15	0.05	0.05
Suburban school	-0.13	0.12	0.09	0.10
Town school	-0.09	-0.20	-0.14	-0.14
Rural school	0.09	-0.15	-0.03	-0.03
Title I status	-0.19	-0.12	-0.36	-0.35
Education Service Center region	0.08	-0.07	0.00	0.00

Source: Authors' analyses based on data provided by Texas Education Agency.

Table B5. Correlations between covariates or predictors and accountability score for Texas elementary, middle, and high schools, 2018/19

Covariate or predictor	Elementary	Middle	High	Combined
	Correlation (<i>r</i>)	Correlation (<i>r</i>)	Correlation (<i>r</i>)	Correlation (<i>r</i>)
Student characteristic				
Percentage Asian	0.22	0.22	0.27	0.26
Percentage Black	-0.22	-0.18	-0.27	-0.27
Percentage Hispanic	-0.19	0.10	-0.13	-0.12
Percentage Native American	0.01	-0.03	0.00	0.00
Percentage Pacific Islander	0.00	0.10	0.01	0.03
Percentage two or more races	-0.12	-0.14	0.08	0.08
Percentage White	0.23	-0.06	0.18	0.18
Percentage economically disadvantaged	-0.45	-0.25	-0.43	-0.42
Percentage in special education	-0.31	-0.40	-0.46	-0.46
Percentage English learner students	-0.14	0.03	-0.28	-0.27
Total student enrollment	0.00	0.12	-0.07	-0.07
Student attendance				
Chronic absenteeism rate	-0.39	-0.47	-0.61	-0.61
Student attendance rate	0.40	0.48	0.60	0.60
Course enrollment and completion				
Average number of course failures	-0.14	0.00	-0.39	-0.35
Percentage of students who failed at least one course	-0.18	-0.04	-0.37	-0.35
Percentage of students who completed at least one advanced course	0.34	0.44	0.46	0.46
Average number of credits completed by students in grade 9	0.17	0.14	0.31	0.30
Average number of advanced courses students completed	0.36	0.42	0.45	0.44
Student discipline				
Percentage of students with at least one in-school suspension	-0.25	-0.18	-0.34	-0.33
Percentage of students with at least one out-of-school suspension	-0.18	-0.14	-0.41	-0.41
Percentage of students with at least one expulsion	-0.28	-0.20	-0.37	-0.36
Percentage of students with two or more in-school or out-of-school suspensions	-0.24	-0.17	-0.40	-0.39
Average number of in-school suspensions per student	-0.23	-0.12	-0.32	-0.30
Average number of out-of-school suspensions per student	-0.19	-0.13	-0.40	-0.39
Average number of expulsions per student	-0.25	-0.19	-0.36	-0.35
Average number of in-school or out-of-school suspensions per student	-0.25	-0.13	-0.38	-0.36
Teacher factor				
Average years of professional experience	0.23	0.02	0.13	0.13
Percentage of teachers with three or fewer years of professional experience	-0.32	-0.12	-0.22	-0.21

Covariate or predictor	Elementary	Middle	High	Combined
	Correlation (<i>r</i>)	Correlation (<i>r</i>)	Correlation (<i>r</i>)	Correlation (<i>r</i>)
Percentage of teachers who continued teaching: prospective	0.15	0.13	0.12	0.12
Percentage of teachers who continued teaching: retrospective	0.32	0.23	0.23	0.22
Percentage of teachers who left the school: prospective	-0.39	-0.33	-0.29	-0.29
Percentage of teachers who left the school: retrospective	-0.19	-0.20	-0.11	-0.11
School characteristic				
City school	-0.01	0.16	0.00	0.00
Suburban school	-0.04	0.09	0.06	0.07
Town school	-0.03	-0.08	-0.07	-0.07
Rural school	0.05	-0.18	0.00	-0.01
Title I status	-0.27	-0.19	-0.34	-0.34
Education Service Center region	0.00	-0.07	-0.01	-0.01

Source: Authors' analyses based on data provided by Texas Education Agency.

Table B6. Percentage of Texas schools above the selected indicator cutpoints, by school level and school year, 2017/18 through 2019/20

Indicator	2017/18	2018/19	2019/20
Elementary schools			
Student attendance rate: Acceptable	58.4	59.7	86.6*
Chronic absenteeism rate: Acceptable	39.4	39.6	12.6*
Middle schools			
Student attendance rate: Excellent	62.1	63.1	90.7*
Chronic absenteeism rate: Excellent	35.6	34.5	8.7*
Percentage of students with two or more in-school or out-of-school suspensions: Acceptable	27.7	30.9	16.4*
Average number of in-school or out-of-school suspensions per student: Acceptable	30.2	34.1	18.2*
Average number of expulsions per student: Acceptable	38.5	41.9	28.5*
Percentage of students with at least one expulsion: Acceptable	32.8	36.1	24.2*
Percentage of students with at least one out-of-school suspension: Acceptable	27.3	29.4	19.5*
Average number of out-of-school suspensions per student: Acceptable	28.9	30.7	20.3*
Percentage of teachers who left the school: prospective: Acceptable	49.5	49.8	95.2*
High schools			
Average number of advanced courses students completed: Excellent	71.3	75.1	77.4
Percentage of students who completed at least one advanced course: Excellent	64.9	68.0	70.7
Percentage of teachers who left the school: prospective: Acceptable	31.8	30.3	85.2*
Percentage of teachers with three or fewer years of professional experience: Acceptable	34.7	32.7	31.4
Chronic absenteeism rate: Acceptable	45.5	43.5	15.5*
Percentage of teachers who continued teaching: retrospective: Acceptable	72.1	75.1	79.2
Percentage of students who failed at least one course: Acceptable	29.1	30.7	16.9*
Average years of professional experience: Acceptable	46.4	47.6	47.3
Student attendance rate: Acceptable	78.5	79.1	92.9*
Average number of course failures: Acceptable	28.4	29.0	13.8*

* denotes differences of 5 percentage points or more between 2018/19 and 2019/20.

Note: Table includes indicators with at least acceptable discrimination quality. Discrimination quality appears after the colon in the indicator label. When there are differences in percentage points between 2017/18 and 2018/19 and between 2018/19 and 2019/20 that are 5 percentage points or more, the indicator is considered not consistent. The study defines schools that met accountability expectations as those that received a rating of C or higher.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Table B7. Percentage of Texas elementary schools classified as not meeting accountability expectations according to selected indicator cutpoints, by school year, 2018/19 and 2019/20

Indicator and classification	2018/19	2019/20	Change
Student attendance rate			
Not meeting accountability expectations both years	33.2	12.5	-20.7*
Not meeting accountability expectations current year only	7.1	0.4	-6.7*
Not meeting accountability expectations prior year only	8.3	27.6	19.3*
Meeting accountability expectations both years	51.4	59.5	8.1*
Chronic absenteeism rate			
Not meeting accountability expectations both years	32.0	11.8	-20.2*
Not meeting accountability expectations current year only	7.4	0.3	-7.1*
Not meeting accountability expectations prior year only	7.3	27.5	20.1*
Meeting accountability expectations both years	53.3	60.4	7.1*

* denotes differences of 5 percentage points or more between 2018/19 and 2019/20.

Note: Schools that did not meet accountability expectations are schools predicted to receive an overall accountability rating of *D* or below using the cutpoint estimated for the selected indicator. Selected indicators are those with at least acceptable discrimination quality, and indicators are ordered from highest to lowest discrimination quality. When there are differences of 5 percentage points or more in the percentage of schools classified as not meeting accountability expectations between school years by a particular indicator, the indicator is considered not consistent.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Table B8. Percentage of Texas middle schools classified as not meeting accountability expectations according to selected indicator cutpoints, by school year, 2018/19 and 2019/20

Indicator and classification	2018/19	2019/20	Difference
Student attendance rate			
Not meeting accountability expectations both years	30.9	9.1	-21.8*
Not meeting accountability expectations current year only	6.7	0.1	-6.6*
Not meeting accountability expectations prior year only	6.8	27.6	20.7*
Meeting accountability expectations both years	55.6	63.2	7.6*
Chronic absenteeism rate			
Not meeting accountability expectations both years	28.8	8.5	-20.3*
Not meeting accountability expectations current year only	6.2	0.3	-6.0*
Not meeting accountability expectations prior year only	6.7	25.9	19.1*
Meeting accountability expectations both years	58.3	65.4	7.2*
Percentage of students with two or more in-school or out-of-school suspensions			
Not meeting accountability expectations both years	23.3	15.3	-8.0*
Not meeting accountability expectations current year only	8.0	1.4	-6.6*
Not meeting accountability expectations prior year only	4.4	15.7	11.2*
Meeting accountability expectations both years	64.4	67.7	3.3
Average number of in-school or out-of-school suspensions per student			
Not meeting accountability expectations both years	25.8	17.2	-8.6*
Not meeting accountability expectations current year only	8.8	1.3	-7.5*
Not meeting accountability expectations prior year only	4.4	17.0	12.7*
Meeting accountability expectations both years	61.1	64.5	3.4
Average number of expulsions per student			
Not meeting accountability expectations both years	31.5	24.8	-6.7*
Not meeting accountability expectations current year only	11.4	4.3	-7.1*
Not meeting accountability expectations prior year only	7.7	17.4	9.7*
Meeting accountability expectations both years	49.4	53.6	4.2
Percentage of students with at least one expulsion			
Not meeting accountability expectations both years	25.7	19.9	-5.8*
Not meeting accountability expectations current year only	11.5	4.7	-6.8*
Not meeting accountability expectations prior year only	7.6	16.4	8.7*
Meeting accountability expectations both years	55.2	59.1	3.9
Percentage of students with at least on out-of-school suspension			
Not meeting accountability expectations both years	22.9	18.2	-4.7*
Not meeting accountability expectations current year only	6.4	1.3	-5.2*
Not meeting accountability expectations prior year only	3.7	11.2	7.5*
Meeting accountability expectations both years	67.0	69.3	2.4
Average number of out-of-school suspensions per student			
Not meeting accountability expectations both years	24.1	19.1	-5.0 ^a
Not meeting accountability expectations current year only	6.3	1.3	-5.0*

Indicator and classification	2018/19	2019/20	Difference
Not meeting accountability expectations prior year only	4.1	11.5	7.4
Meeting accountability expectations both years	65.5	68.2	2.7
Percentage of teachers who left the school: prospective			
Not meeting accountability expectations both years	33.7	47.5	13.8*
Not meeting accountability expectations current year only	15.6	47.8	32.2*
Not meeting accountability expectations prior year only	14.3	1.6	-12.8*
Meeting accountability expectations both years	36.4	3.1	-33.3*

* denotes differences of 5 percentage points or more between 2018/19 and 2019/20.

Note: Schools not meeting accountability expectations are those predicted to receive an overall accountability rating of *D* or below using the cutpoint estimated for the selected indicator. Selected indicators are those with at least acceptable discrimination quality, and indicators are ordered from highest to lowest discrimination quality. When there are differences of 5 percentage points or more in the percentage of schools classified as not meeting accountability expectations between school years by a particular indicator, the indicator is considered not consistent.

a. Difference is less than 5 percentage points but appears to equal 5 percentage points because of rounding.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Table B9. Percentage of Texas high schools classified as not meeting accountability expectations according to selected indicator cutpoints, by school year, 2018/19 and 2019/20

Indicator and classification	2018/19	2019/20	Difference
Average number of advanced courses students completed			
Not meeting accountability expectations both years	19.0	16.7	-2.2
Not meeting accountability expectations current year only	5.2	5.0	-0.2
Not meeting accountability expectations prior year only	9.5	7.7	-1.7
Meeting accountability expectations both years	66.3	70.5	4.2
Percentage of students who completed at least one advanced course			
Not meeting accountability expectations both years	26.3	23.8	-2.5
Not meeting accountability expectations current year only	5.4	5.0	-0.4
Not meeting accountability expectations prior year only	8.5	7.9	-0.7
Meeting accountability expectations both years	59.8	63.4	3.6
Percentage of teachers who continued teaching: prospective			
Not meeting accountability expectations both years	13.8	11.3	-2.5
Not meeting accountability expectations current year only	9.9	8.2	-1.7
Not meeting accountability expectations prior year only	13.5	13.4	-0.2
Meeting accountability expectations both years	62.8	67.1	4.3
Percentage of students who failed at least one course			
Not meeting accountability expectations both years	64.2	65.6	1.4
Not meeting accountability expectations current year only	5.4	17.7	12.3*
Not meeting accountability expectations prior year only	7.0	3.8	-3.1
Meeting accountability expectations both years	23.5	12.9	-10.6*
Average years of professional experience			
Not meeting accountability expectations both years	46.0	46.1	0.1
Not meeting accountability expectations current year only	5.3	5.8	0.5
Not meeting accountability expectations prior year only	7.2	5.9	-1.2
Meeting accountability expectations both years	41.5	42.1	0.6
Student attendance rate			
Not meeting accountability expectations both years	17.4	6.9	-10.4*
Not meeting accountability expectations current year only	3.8	0.1	-3.7
Not meeting accountability expectations prior year only	4.0	13.8	9.8*
Meeting accountability expectations both years	74.9	79.2	4.3
Percentage of teachers who left the school: retrospective			
Not meeting accountability expectations both years	16.9	27.6	10.7*
Not meeting accountability expectations current year only	12.9	57.8	44.9*
Not meeting accountability expectations prior year only	14.3	2.7	-12.1*
Meeting accountability expectations both years	55.9	12.4	-43.5*
Percentage of teachers with three or fewer years of professional experience			
Not meeting accountability expectations both years	25.5	23.3	-2.2
Not meeting accountability expectations current year only	6.4	7.2	0.8
Not meeting accountability expectations prior year only	8.8	9.1	0.3
Meeting accountability expectations both years	59.3	60.4	1.1

Indicator and classification	2018/19	2019/20	Difference
Chronic absenteeism rate			
Not meeting accountability expectations both years	38.8	15.5	-23.3*
Not meeting accountability expectations current year only	5.0	0.2	-4.8
Not meeting accountability expectations prior year only	6.5	27.9	21.4*
Meeting accountability expectations both years	49.7	56.4	6.8*
Average number of course failures			
Not meeting accountability expectations both years	23.4	9.7	-13.7*
Not meeting accountability expectations current year only	5.5	3.8	-1.7
Not meeting accountability expectations prior year only	4.8	19.3	14.5*
Meeting accountability expectations both years	66.3	67.3	1.0

* denotes differences of 5 percentage points or more between 2018/19 and 2019/20.

Note: Schools not meeting accountability expectations are those predicted to receive an overall accountability rating of *D* or below using the cutpoint estimated for the selected indicator. Selected indicators are those with at least acceptable discrimination quality, and indicators are ordered from highest to lowest discrimination quality. When there are differences of 5 percentage points or more in the percentage of schools classified as not meeting accountability expectations between school years by a particular indicator, the indicator is considered not consistent.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Appendix C. Supplemental analyses

This appendix provides results that supplement the findings in the main report, including results from the logistic regression analyses used to address research question 1 and the multiple regression analyses that supplement research question 1.

Tables C1–C4 provide the results for a multiple regression analysis, focused on the school-level predictors of accountability scores of Texas schools in 2017/18 and 2018/19.

Tables C5 and C6 provide the full elastic-net results for the supplemental analysis for research question 1, focused on predictors of accountability scores of Texas schools in 2017/18 and 2018/19.

Tables C7–C9 provide the full logistic regression results for research question 1, focused on school-level predictors of the likelihood of Texas schools meeting accountability expectations (rating C or higher) in 2017/18 and 2018/19.

Table C1. Relationship between predictors and overall accountability score in Texas schools, by school level, 2017/18 to 2018/19

Predictor	Elementary schools		Middle schools		High schools	
	2017/18	2018/19	2017/18	2018/19	2017/18	2018/19
Student attendance						
Student attendance rate	↑	↑	↑	↑	↑	↑
Chronic absenteeism rate	↑	↑	↓	↓	↓	↓
Course enrollment and completion						
Average number of course failures	na	na	na	na	–	↓
Percentage of students who failed at least one course	na	na	na	na	↓	↓
Percentage of students who completed at least one advanced course	na	na	na	na	↑	↑
Average number of credits completed by students in grade 9	na	na	na	na	↑	↑
Average number of advanced courses completed	na	na	na	na	↑	↑
Student discipline						
Percentage of students with at least one in-school suspension	↓	↓	↓	↓	↓	↑
Percentage of students with at least one out-of-school suspension	↓	↓	↓	↓	↓	–
Percentage of students with at least one expulsion	↑	–	–	↓	↓	↓
Percentage of students with two or more in-school or out-of-school suspensions	↓	–	↓	↓	–	–
Average number of in-school suspensions per student	↑	↑	–	–	–	↓
Average number of out-of-school suspensions per student	↓	↓	–	–	–	↑
Average number of expulsions per student	↓	↓	↓	↓	↓	↓
Average number of in-school or out-of-school suspensions per student	↑	–	–	–	–	↓

Predictor	Elementary schools		Middle schools		High schools	
	2017/18	2018/19	2017/18	2018/19	2017/18	2018/19
Teacher factor						
Average years of professional experience	↑	↑	–	–	–	↓
Percentage of teachers with three or fewer years of professional experience	↓	↓	↓	↓	↓	↓
Percentage of teachers who continued teaching: prospective	↑	↓	↑	↓	–	↑
Percentage of teachers who continued teaching: retrospective	↑	↑	↑	↑	↑	↑
Percentage of teachers who left the school: prospective	↓	↓	↓	↓	↓	↓
Percentage of teachers who left the school: retrospective	↓	↓	↓	↓	↓	↓

↑ Denotes predictors that were positively associated with overall accountability scores. ↓ Denotes predictors that were negatively associated with overall accountability scores. – Denotes predictors that were not associated with overall accountability scores. na is not applicable because the measure was not available for these grade levels.

Note: Full results are in tables C2-C4 in appendix C.

Source: Authors' analysis of data from the Texas Education Agency.

Table C2. Coefficients estimated from an ordinary least squares regression predicting Texas elementary schools' accountability scores, 2017/18 and 2018/19

Covariate or predictor	2017/18		2018/19	
	Coefficient	Standard error	Coefficient	Standard error
Student characteristic				
Percentage Asian	2.52	1.71	-1.12	1.71
Percentage Black	2.43	1.71	-1.22	1.71
Percentage Hispanic	2.46	1.71	-1.20	1.71
Percentage Native American	1.95	1.71	-1.30	1.71
Percentage Pacific Islander	2.87	1.73	-1.17	1.72
Percentage two or more races	2.42	1.71	-1.35	1.71
Percentage White	2.44	1.71	-1.22	1.71
Percentage economically disadvantaged	-.07***	.01	-.09***	.01
Percentage in special education	-.05	.03	-.06	.04
Percentage English learner students	.02**	.01	.03***	.01
Total student enrollment	-.00*	.00	-.00	.00
Student attendance				
Student attendance rate	2.65***	.36	2.40***	.37
Chronic absenteeism rate	.28***	.08	.23**	.08
Student discipline				
Percentage of students with at least one in-school suspension	-.58***	.11	-.34**	.10
Percentage of students with at least one out-of-school suspension	-.04	.30	-.11	.27
Percentage of students with at least one expulsion	4.80**	1.63	1.24	1.40
Percentage of students with two or more in-school or out-of-school suspensions	-.47	.30	-.09	.29
Average number of in-school suspensions per student	21.22***	6.39	5.52	5.14
Average number of out-of-school suspensions per student	-11.88	17.66	-21.48	15.64
Average number of expulsions per student	-404.41**	137.45	-106.13	115.88
Teacher factor				
Average years of professional experience	.15*	.07	.20**	.07
Percentage of teachers with three or fewer years of professional experience	-.02	.01	-.03*	.02
Percentage of teachers who continued teaching: prospective	.03	.02	-.02	.02
Percentage of teachers who continued teaching: retrospective	.09***	.02	.08***	.02
Percentage of teachers who left the school: prospective	-.07***	.01	-.09***	.01
Percentage of teachers who left the school: retrospective	-.01	.01	-.02	.01
School characteristic				
City school	2.92***	.44	1.96***	.45
Suburban school	2.79***	.46	2.58***	.47
Rural school	2.18***	.45	1.95***	.46
Title I status	-4.81***	.51	-3.74***	.53
Statistic				
Intercept	-423.37*	174.51	-26.86	174.33
R ²	.35		.36	
Number of observations	4,834		4,878	

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$.

na is not applicable because the measure was not available for these grade levels.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Table C3. Coefficients estimated from an ordinary least squares regression predicting Texas middle schools' accountability scores, 2017/18 and 2018/19

Covariate or predictor	2017/18		2018/19	
	Coefficient	Standard error	Coefficient	Standard error
Student characteristic				
Percentage Asian	-.84	2.45	1.14	2.30
Percentage Black	-1.03	2.44	.98	2.30
Percentage Hispanic	-.95	2.44	1.01	2.30
Percentage Native American	-1.25	2.46	.80	2.31
Percentage Pacific Islander	-.36	2.45	1.49	2.31
Percentage two or more races	-1.06	2.45	.95	2.31
Percentage White	-.97	2.44	1.02	2.30
Percentage economically disadvantaged	.01	.02	.04*	.02
Percentage in special education	-.36***	.05	-.39***	.06
Percentage English learner students	-.05**	.02	-.09***	.02
Total student enrollment	.00	.00	-.00	.00
Student attendance				
Student attendance rate	1.47**	.48	1.35**	.47
Chronic absenteeism rate	-.25*	.12	-.15	.12
Student discipline				
Percentage of students with at least one in-school suspension	-.12	.07	-.12	.07
Percentage of students with at least one out-of-school suspension	-.14	.12	-.21*	.10
Percentage of students with at least one expulsion	.86	.47	-.33	.48
Percentage of students with two or more in-school or out-of-school suspensions	-.12	.18	-.12	.15
Average number of in-school suspensions per student	2.16	2.37	1.64	2.15
Average number of out-of-school suspensions per student	4.59	5.00	2.03	3.87
Average number of expulsions per student	-92.43*	36.97	-14.02	38.25
Teacher factor				
Average years of professional experience	.00	.10	-.02	.10
Percentage of teachers with three or fewer years of professional experience	-.01	.02	-.02	.02
Percentage of teachers who continued teaching: prospective	.05	.03	-.07*	.03
Percentage of teachers who continued teaching: retrospective	.10***	.02	.07**	.03
Percentage of teachers who left the school: prospective	-.03*	.01	-.11***	.01
Percentage of teachers who left the school: retrospective	-.06***	.01	-.03***	.01
School characteristic				
City school	2.31***	.64	3.35***	.63
Suburban school	1.85**	.67	2.76***	.65
Rural school	-.03	.58	1.15*	.57
Title I status	-3.49***	.64	-2.98***	.63
Statistic				
Intercept	35.35	249.62	-136.13	235.47
R ²	.49		.51	
Number of observations	1,965		1,983	

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$.

na is not applicable because the measure was not available for these grade levels.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Table C4. Coefficients estimated from an ordinary least squares regression predicting Texas high schools' accountability scores, 2017/18 and 2018/19

Covariate or predictor	2017/18		2018/19	
	Coefficient	Standard error	Coefficient	Standard error
Student characteristic				
Percentage Asian	-3.95*	1.98	.11	1.51
Percentage Black	-4.15*	1.98	-.04	1.51
Percentage Hispanic	-4.06*	1.98	.03	1.51
Percentage Native American	-4.23*	1.98	-.21	1.52
Percentage Pacific Islander	-4.11*	1.99	.24	1.51
Percentage two or more races	-4.06*	1.98	-.10	1.51
Percentage White	-4.06*	1.98	.01	1.51
Percentage economically disadvantaged	-.04***	.01	-.03**	.01
Percentage in special education	-.27***	.05	-.15***	.04
Percentage English learner students	-.00	.02	-.05**	.02
Total student enrollment	.00	.00	-.00	.00
Student attendance				
Student attendance rate	.43	.27	.44*	.21
Chronic absenteeism rate	-.27***	.07	-.12*	.06
Course enrollment and completion				
Average number of course failures	1.51	.81	.03	.80
Percentage of students who failed at least one course	-.09***	.03	-.06*	.02
Percentage of students who completed at least one advanced course	.11***	.02	.06***	.01
Average number of credits completed in grade 9	.33	.17	.39**	.13
Average number of advanced courses completed	.20	.52	.55	.33
Student discipline				
Percentage of students with at least one in-school suspension	-.02	.06	.12*	.05
Percentage of students with at least one out-of-school suspension	-.21	.14	-.10	.11
Percentage of students with at least one expulsion	.36	.43	.09	.37
Percentage of students with two or more in-school or out-of-school suspensions	.07	.16	-.01	.13
Average number of in-school suspensions per student	-.94	2.74	-4.64*	2.03
Average number of out-of-school suspensions per student	7.51	6.74	6.99	5.50
Average number of expulsions per student	-27.93	34.66	-13.72	31.00
Teacher factor				
Average years of professional experience	.08	.08	-.05	.06
Percentage of teachers with three or fewer years of professional experience	-.01	.02	-.04**	.01
Percentage of teachers who continued teaching: prospective	.00	.03	.01	.02
Percentage of teachers who continued teaching: retrospective	.12***	.02	.09***	.02
Percentage of teachers who left the school: prospective	-.02	.01	-.04**	.01
Percentage of teachers who left the school: retrospective	-.01	.01	-.02**	.01
School characteristic				
City school	2.10***	.58	.64	.46
Suburban school	1.05	.62	.17	.49
Rural school	.30	.47	-.38	.38
Title I status	-1.67***	.47	-.93*	.39

Covariate or predictor	2017/18		2018/19	
	Coefficient	Standard error	Coefficient	Standard error
Statistic				
Intercept	441.62*	200.50	39.13	152.62
R^2	.64		.61	
Number of observations	1,566		1,589	

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Table C5. Coefficients in standard deviation units estimated from linear elastic-net regression predicting schools' overall accountability scale score, 2017/18

Covariate or predictor	Elementary schools	Middle schools	High schools
	Coefficient	Coefficient	Coefficient
Student characteristic			
Percentage Asian	.08	.11	.08
Percentage Black	-.00	-.06	-.11
Percentage Hispanic	.04	.06	.00
Percentage Native American	-.05	-.02	-.01
Percentage Pacific Islander	.02	.02	.00
Percentage two or more races	.00	.00	.00
Percentage White	-.05	.00	.00
Percentage economically disadvantaged	-.34	-.09	-.14
Percentage in special education	-.02	-.13	-.12
Percentage English learner students	.07	-.03	.00
Total student enrollment	-.02	.07	.03
Student attendance			
Student attendance rate	.35	.22	.13
Chronic absenteeism rate	.17	-.13	-.22
Course enrollment and completion			
Average number of course failures	na	na	.00
Percentage of students who failed at least one course	na	na	-.05
Percentage of students who completed at least one advanced course	na	na	.23
Average number of credits completed by students in grade 9	na	na	.01
Average number of advanced courses students completed	na	na	.04
Student discipline			
Percentage of students with at least one in-school suspension	-.25	-.10	-.02
Percentage of students with at least one out-of-school suspension	-.00	-.02	-.02
Percentage of students with at least one expulsion	.15	.00	-.00
Percentage of students with two or more in-school or out-of-school suspensions	-.06	-.02	.00
Average number of in-school suspensions per student	.12	.00	.00
Average number of out-of-school suspensions per student	-.05	.00	.00
Average number of expulsions per student	-.15	-.06	-.00
Average number of in-school or out-of-school suspensions per student	.05	.00	.00
Teacher factor			
Average years of professional experience	.04	.00	.00
Percentage of teachers with three or fewer years of professional experience	-.04	-.00	-.03
Percentage of teachers who continued teaching: prospective	.02	.02	.00
Percentage of teachers who continued teaching: retrospective	.08	.10	.10
Percentage of teachers who left the school: prospective	-.11	-.05	-.04
Percentage of teachers who left the school: retrospective	-.01	-.09	-.01
Statistic			
Root mean square error	.82	.73	.62
R ²	.33	.47	.62
Akaike information criterion	4,764.11	1,136.28	685.88
Number of observations	4,887	1,979	1,574

na is not applicable because the measure was not available for these grade levels.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Table C6. Coefficients in standard deviation units estimated from linear elastic-net regression predicting Texas schools' overall accountability scale score, 2018/19

Covariate or predictor	Elementary schools	Middle schools	High schools
	Coefficient	Coefficient	Coefficient
Student characteristic			
Percentage Asian	.08	.10	.09
Percentage Black	.00	-.03	-.10
Percentage Hispanic	.02	.00	.05
Percentage Native American	-.01	-.01	-.02
Percentage Pacific Islander	.00	.02	.01
Percentage two or more races	-.02	.00	-.02
Percentage White	-.06	.00	.00
Percentage economically disadvantaged	-.35	-.01	-.13
Percentage in special education	-.02	-.12	-.09
Percentage English learner students	.09	-.08	-.06
Total student enrollment	-.01	.02	.00
Student attendance			
Student attendance rate	.27	.18	.15
Chronic absenteeism rate	.10	-.09	-.14
Course enrollment and completion			
Average number of course failures	na	na	-.02
Percentage of students who failed at least one course	na	na	-.09
Percentage of students who completed at least one advanced course	na	na	.19
Average number of credits completed by students in grade 9	na	na	.04
Average number of advanced courses students completed	na	na	.08
Student discipline			
Percentage of students with at least one in-school suspension	-.13	-.09	.03
Percentage of students with at least one out-of-school suspension	-.00	-.08	.00
Percentage of students with at least one expulsion	.00	-.07	-.00
Percentage of students with two or more in-school or out-of-school suspensions	.00	-.06	.00
Average number of in-school suspensions per student	.02	.00	-.05
Average number of out-of-school suspensions per student	-.08	.00	.00
Average number of expulsions per student	-.00	-.05	-.02
Average number of in-school or out-of-school suspensions per student	.00	.00	-.00
Teacher factor			
Average years of professional experience	.05	.00	-.00
Percentage of teachers with three or fewer years of professional experience	-.05	-.03	-.08
Percentage of teachers who continued teaching: prospective	-.01	-.04	.00
Percentage of teachers who continued teaching: retrospective	.07	.06	.09
Percentage of teachers who left the school: prospective	-.13	-.16	-.08
Percentage of teachers who left the school: retrospective	-.02	-.05	-.04
Statistic			
Root mean square error	.81	.72	.65
R ²	.35	.48	.58
Akaike information criterion	3,245.56	1,799.22	1,437.61
Number of observations	4,936	1,994	1,597

na is not applicable because the measure was not available for these grade levels.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Table C7. Coefficients estimated from a logistic regression predicting whether Texas elementary schools earned an accountability rating of C or higher, 2017/18 and 2018/19

Covariate or predictor	2017/18		2018/19	
	Coefficient	Standard error	Coefficient	Standard error
Student characteristic				
Percentage Asian	.91	.63	-.34	.63
Percentage Black	.87	.63	-.38	.63
Percentage Hispanic	.86	.63	-.38	.63
Percentage Native American	.77	.64	-.35	.63
Percentage Pacific Islander	1.10	.64	-.36	.63
Percentage two or more races	.84	.63	-.39	.63
Percentage White	.86	.63	-.39	.63
Percentage economically disadvantaged	-.01*	.00	-.02***	.00
Percentage in special education	.01	.01	.01	.01
Percentage English learner students	.01**	.00	.01***	.00
Total student enrollment	-.00	.00	.00	.00
Student attendance				
Student attendance rate	.38**	.13	.48***	.13
Chronic absenteeism rate	.03	.03	.05	.03
Student discipline				
Percentage of students with at least one in-school suspension	-.10**	.03	-.06	.03
Percentage of students with at least one out-of-school suspension	-.00	.09	.03	.08
Percentage of students with at least one expulsion	1.13*	.49	.21	.40
Percentage of students with two or more in-school or out-of-school suspensions	-.10	.09	.01	.09
Average number of in-school suspensions per student	3.96*	1.95	.53	1.50
Average number of out-of-school suspensions per student	-2.69	5.41	-6.29	4.73
Average number of expulsions per student	-87.71*	40.80	-21.14	32.67
Teacher factor				
Average years of professional experience	-.01	.02	.04	.02
Percentage of teachers with three or fewer years of professional experience	-.01**	.00	-.01	.01
Percentage of teachers who continued teaching: prospective	.01	.01	.00	.01
Percentage of teachers who continued teaching: retrospective	.01	.01	.01	.01
Percentage of teachers who left the school: prospective	-.02***	.00	-.02***	.00
Percentage of teachers who left the school: retrospective	-.00	.00	-.01*	.00
School characteristic				
City school	.65***	.14	.37**	.14
Suburban school	.76***	.16	.80***	.17
Rural school	.34*	.14	.25	.15
Title I status	-1.42***	.34	-1.42***	.38
Statistic				
Intercept	-120.26	64.47	-4.86	63.89
Nagelkerke adjusted R ²	.23		.27	
Number of observations	4,783		4,872	

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$.

Note: The study defines schools that meet accountability expectations as those that received a rating of C or higher.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Table C8. Coefficients estimated from a logistic regression predicting whether Texas middle schools earned an accountability rating of C or higher, 2017/18 and 2018/19

Covariate or predictor	2017/18		2018/19	
	Coefficient	Standard error	Coefficient	Standard error
Student characteristic				
Percentage Asian	.18	1.14	.36	1.17
Percentage Black	.06	1.14	.20	1.17
Percentage Hispanic	.08	1.14	.21	1.17
Percentage Native American	-.02	1.14	.09	1.18
Percentage Pacific Islander	.32	1.15	.27	1.18
Percentage two or more races	.13	1.14	.25	1.18
Percentage White	.08	1.14	.21	1.17
Percentage economically disadvantaged	.01	.01	.03**	.01
Percentage in special education	-.07**	.03	-.10***	.03
Percentage English learner students	-.01	.01	-.03***	.01
Total student enrollment	.00	.00	.00	.00
Student attendance				
Student attendance rate	.17	.21	.56*	.23
Chronic absenteeism rate	-.10*	.05	.01	.06
Student discipline				
Percentage of students with at least one in-school suspension	.03	.03	-.02	.03
Percentage of students with at least one out-of-school suspension	-.04	.05	-.03	.04
Percentage of students with at least one expulsion	.25	.18	.03	.19
Percentage of students with two or more in-school or out-of-school suspensions	-.06	.07	-.03	.07
Average number of in-school suspensions per student	-.47	.92	-.14	.87
Average number of out-of-school suspensions per student	1.69	1.87	-.12	1.54
Average number of expulsions per student	-26.09	13.44	-10.37	14.40
Teacher factor				
Average years of professional experience	.05	.05	.04	.05
Percentage of teachers with three or fewer years of professional experience	-.00	.01	-.01	.01
Percentage of teachers who continued teaching: prospective	.00	.01	-.01	.01
Percentage of teachers who continued teaching: retrospective	.01	.01	.01	.01
Percentage of teachers who left the school: prospective	-.01*	.00	-.02***	.01
Percentage of teachers who left the school: retrospective	-.02***	.00	-.01	.00
School characteristic				
City school	.56*	.27	.75**	.28
Suburban school	.39	.30	.83**	.31
Rural school	-.15	.24	.15	.25
Title I status	-1.01*	.47	-1.09	.57
Statistic				
Intercept	-20.92	115.43	-69.99	118.85
Nagelkerke adjusted R ²	.33		.40	
Number of observations	1,947		1,978	

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$.

Note: The study defines schools that meet accountability expectations as those that received a rating of C or higher.

Source: Authors' analyses based on data provided by the Texas Education Agency.

Table C9. Coefficients estimated from a logistic regression predicting whether Texas high schools earned an accountability rating of C or higher, 2017/18 and 2018/19

Covariate or predictor	2017/18		2018/19	
	Coefficient	Standard error	Coefficient	Standard error
Student characteristic				
Percentage Asian	-1.37	1.63	-10.15**	3.51
Percentage Black	-1.53	1.63	-10.79**	3.57
Percentage Hispanic	-1.50	1.63	-10.76**	3.57
Percentage Native American	-1.44	1.63	-10.55**	3.69
Percentage Pacific Islander	-1.25	1.68	-9.44**	3.41
Percentage two or more races	-1.53	1.63	-10.76**	3.58
Percentage White	-1.50	1.63	-10.77**	3.57
Percentage economically disadvantaged	-.01	.01	.03	.02
Percentage in special education	-.06	.04	-.08	.09
Percentage English learner students	-.01	.01	-.04	.03
Total student enrollment	-.00	.00	.00	.00
Student attendance				
Student attendance rate	.11	.18	.03	.32
Chronic absenteeism rate	-.08	.05	-.08	.09
Course enrollment and completion				
Average number of course failures	.92	.64	-.99	1.21
Percentage of students who failed at least one course	-.04*	.02	.00	.04
Percentage of students who completed at least one advanced course	-.02	.03	.05	.05
Average number of credits completed in grade 9	.16	.13	.14	.19
Average number of advanced courses completed	3.27**	1.13	2.32	2.08
Student discipline				
Percentage of students with at least one in-school suspension	-.01	.04	.16	.11
Percentage of students with at least one out-of-school suspension	.08	.10	.18	.17
Percentage of students with at least one expulsion	.58*	.23	-1.11	.73
Percentage of students with two or more in-school or out-of-school suspensions	.01	.11	-.26	.23
Average number of in-school suspensions per student	.08	1.68	-1.20	2.48
Average number of out-of-school suspensions per student	-4.47	5.09	-2.14	6.69
Average number of expulsions per student	-39.81*	17.56	90.50	62.43
Teacher factor				
Average years of professional experience	.05	.07	.14	.14
Percentage of teachers with three or fewer years of professional experience	-.01	.01	-.02	.03
Percentage of teachers who continued teaching: prospective	-.01	.02	.03	.03
Percentage of teachers who continued teaching: retrospective	.03	.02	.02	.04
Percentage of teachers who left the school: prospective	-.01	.01	-.01	.02
Percentage of teachers who left the school: retrospective	.01	.01	-.01	.02

Covariate or predictor	2017/18		2018/19	
	Coefficient	Standard error	Coefficient	Standard error
School characteristic				
City school	.70	.46	-.28	1.30
Suburban school	.22	.49	-1.41	1.33
Rural school	-.21	.36	-1.32	1.14
Title I status	-.30	.54	.13	.99
Statistic				
Intercept	140.78	164.90	1,072.25**	360.69
Nagelkerke adjusted R^2	.40		.55	
Number of observations	1,556		1,578	

* Significant at $p < .05$; ** significant at $p < .01$.

Note: The study defines schools that meet accountability expectations as those that received a rating of C or higher.

Source: Authors' analyses based on data provided by the Texas Education Agency.

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