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Indicators of School Performance in Texas

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Indicators of School Performance in Texas

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The School Improvement Division of the Texas Education Agency (TEA) identifies, monitors, and supports low-performing schools. To identify low-performing schools, TEA assigns annual academic accountability ratings to its districts and schools, but these ratings are provided only once per year and are vulnerable to disruptions in the assessment system. Schools with low accountability ratings are considered low performing. TEA partnered with Regional Educational Laboratory Southwest to explore whether information regularly collected by districts and schools could be the basis for creating indicators to monitor low-performing schools. Using school-level data from the two school years preceding the pandemic (2017/18 and 2018/19), this study examined which student behaviors (such as attendance, coursetaking, and discipline) and teacher factors (such as years of experience and turnover) were associated with the performance of Texas schools on accountability measures that use assessment data. The study found that several student behaviors and teacher factors were associated with the likelihood of schools meeting accountability expectations across school levels and could be used to create indicators that identify whether a school was likely to meet accountability expectations. For elementary schools, these indicators included student attendance and chronic absenteeism; for middle schools, these indicators included student attendance, chronic absenteeism, and discipline; and for high schools, these indicators included student coursetaking and teacher turnover. However, many indicators that identified schools as likely to meet accountability expectations in 2017/18 and 2018/19 did not identify these schools as likely to meet accountability expectations in 2019/20, potentially due to structural changes during the pandemic (such as changes in how attendance was reported). TEA staff can consider using these indicators to identify schools that are not likely to meet accountability expectations and may need extra support during a typical school year. The intent of the indicators is not to replace accountability ratings. Instead, they provide information for TEA staff to identify schools needing supports, monitor these schools throughout the school year, and help determine what supports to provide.

Why this study?

Under the provisions of Chapter 39A of the Texas Education Code, the state must help districts improve schools identified as low performing. The School Improvement Division of the Texas Education Agency (TEA) supports this goal by identifying, monitoring, and supporting low-performing schools. To identify low-performing schools, TEA assigns annual academic accountability scores and ratings to its districts and schools. Since 2017/18, TEA has assigned each school a score (on a 100-point scale) in three domains—student achievement, school progress, and closing the gaps in achievement between student groups—and a composite overall score.[1] Schools receive an *A*–*F* accountability rating based on their overall score.

Because the Texas accountability system largely relies on the annual spring administration of the State of Texas Assessments of Academic Readiness (STAAR), School Improvement Division staff cannot access other information, such as student attendance and discipline, that is updated regularly or collected at the start of a school year to formatively monitor and support school improvement. Moreover, the system is vulnerable to disruptions that affect the administration of

For additional information, including background on the study, technical methods, and supporting analyses, access the report appendices at https://ies.ed.gov/ncee/rel/Products/Publication/100919

[1] More information on accountability scores and calculations for each performance domain is in appendix A. The three domains are based on achievement data but have different foci. Both schools and districts receive all three domain scores, although school-level scores are not part of the formula for calculating district-level scores and vice versa. The student achievement domain focuses on the achievement of all students in the current school year, whereas the school progress domain focuses on academic growth and the relative performance of all students from a particular district or school compared with other districts or schools with a similar percentage of students who are eligible for the National School Lunch Program. The closing the gaps domain focuses on differences in student test performance between student groups.

standardized assessments or schools' ability to adequately prepare their students for the assessments, such as the COVID-19 pandemic. In spring 2020, the STAAR assessments were not administered because of the COVID-19 pandemic, so TEA staff could not determine which districts and schools had improved or had not improved between 2019 and 2020.

The School Improvement Division requires a set of monitoring indicators that use readily available data—including data that are available on an ongoing basis and not vulnerable to disruptions in testing—to determine whether a school is on track to meet accountability expectations throughout the school year. Such indicators could provide critical information to TEA staff who support schools, allowing them to make decisions about which schools are at risk of failing to meet accountability standards and need more intensive or different supports before the annual accountability ratings are available at the end of the school year.

TEA partnered with Regional Educational Laboratory Southwest to explore whether information regularly collected by districts and schools could be used for this purpose. Using school-level data from the two school years preceding the pandemic (2017/18 and 2018/19), the study examined which student behaviors (such as attendance, coursetaking, and discipline) and teacher factors (such as years of experience and mobility) were associated with the performance of Texas schools on accountability measures that used assessment data. Based on the student behaviors and teacher factors found to be associated with the performance of Texas schools, the study developed indicators that TEA can consider when identifying schools that may need extra support during the school year. The indicators are not intended to replace the accountability measures for rating schools. Instead, they provide information for TEA staff to consider for ongoing monitoring and when accountability data are not available.

Research questions

This study addressed three research questions:

1. Which student behaviors and teacher factors were associated with the likelihood of Texas schools meeting accountability expectations in 2017/18 and 2018/19? Were the student behaviors and teacher factors that were associated with the likelihood of Texas schools meeting accountability expectations different across school levels?
2. Which student behaviors and teacher factors can be used to create indicators that identify schools that are likely to meet accountability expectations? Were the selected indicators different across school levels?
3. How did the percentages of schools identified as likely to meet accountability expectations by the indicators vary between 2017/18 and 2019/20?

Definitions of key terms used in the report are in box 1. The data sources, sample, and methods used to answer the research questions are summarized in box 2 and detailed in appendix A.

Box 1. Key terms

Accountability rating. School-level accountability ratings come from overall accountability scores. The Texas Education Agency assigns each school an accountability rating of *A*–*F* and classifies schools that receive a rating of *F* as not meeting accountability standards. This study considers schools that receive an accountability rating below *C* as not meeting accountability expectations and, thus, needing additional support. The study adopted a more liberal definition of not meeting accountability expectations in response to the agency's interest in identifying schools that are not likely to meet expectations.

Area under the curve (AUC) statistic. The AUC statistic is a measure ranging between 0 and 1 that summarizes how well indicators distinguish between two outcomes (referred to as discrimination quality). For this study, the outcome is whether a school met accountability expectations. An AUC statistic of 1 indicates that the study correctly classified all schools that met accountability expectations as meeting accountability expectations and all schools that did not meet accountability expectations as not meeting accountability expectations. Conversely, an AUC statistic of 0 indicates that the study incorrectly classified all schools that did not meet accountability expectations as meeting accountability expectations and all schools that met accountability expectations as not meeting accountability expectations. Traditionally, an AUC statistic greater than .5

(which is equivalent to a random guess) is required for a predictor to be considered effective at distinguishing between schools that meet or do not meet accountability expectations.

Chronic absenteeism. A predictor that measures the percentage of students at a Texas public school who were absent for 10 percent or more of the days in which they were enrolled during the school year.

Cutpoint. The cutpoint for an indicator is the value above or below which statistical models predict schools will meet accountability expectations. For example, if the cutpoint for teacher turnover is 20 percent, then a school with a teacher turnover rate of 18 percent is predicted to meet accountability expectations by that indicator.

Discrimination quality. Discrimination quality refers to how well an indicator distinguishes between schools that meet or do not meet accountability expectations. This information helps categorize indicators in terms of usefulness for predicting school accountability status. It comes from the AUC statistic (defined above). In this study, only indicators with acceptable (an AUC greater than or equal to .7 but below .8), excellent (an AUC greater than or equal to .8 but below .9), or outstanding (an AUC of .9 or higher) discrimination quality are considered effective at distinguishing between schools that meet or do not meet accountability expectations. These indicators are eligible for inclusion in the analysis for research question 3.

Indicator. An indicator is a variable with two values that conveys the presence or absence of some condition, to simplify the classification of schools as likely or not likely to meet accountability expectations. In this study, indicators come from continuous school-level predictors that are most strongly associated with the likelihood of meeting accountability expectations. Schools that fall above a certain cutpoint on a school-level predictor receive a value of 1 on the indicator; schools that fall below the cutpoint receive a value of 0.

Indicator consistency. Indicator consistency refers to the extent to which an indicator classifies similar percentages of schools into the same categories (meeting accountability expectations or not meeting expectations) across different school years. This study reported the percentage of schools that were above the cutpoint of each indicator in the 2017/18, 2018/19, and 2019/20 school years. The study team considered an indicator to have consistency—or exhibit consistent classification behavior—if the difference in the percentage of schools classified into the same categories between school years is 5 percentage points or less.

Schools that meet or do not meet accountability expectations. Schools were classified as not meeting accountability expectations if they received (or were predicted to receive) a rating of *D* or *F* on the state's *A*–*F* accountability rating system. Schools were classified as meeting accountability expectations if they received (or were predicted to receive) a rating of *A, B,* or *C* on the state's *A*–*F* accountability rating system.

Predictor. A predictor is a measure of school performance derived from data on student behaviors or teacher factors that may or may not be associated with the likelihood of a school meeting accountability expectations. This study refers to the full set of variables examined to address research question 1 as predictors.

Prospective teacher turnover or continuation. Prospective measures of teacher turnover and continuation compare teachers' employment and school assignment in the current school year with the subsequent school year.

Retrospective teacher turnover or continuation. Retrospective measures of teacher turnover and continuation compare teachers' employment and school assignment in the prior school year with the current school year.

Box 2. Data sources, sample, methods, and limitations

Data sources. The study used publicly available school data from two sources (Texas Academic Performance Reports and Texas Accountability Rating System) downloaded from the Texas Education Agency (TEA) website (TEA, 2019). The study also used deidentified student and teacher data from TEA's Public Education Information Management System, accessed through the Texas Education Research Center at the University of Texas at Austin (see table A1 in appendix A for a list of data sources).

From the publicly available Texas Academic Performance Reports, the study used school-level data on student demographic characteristics, program participation (such as the percentage of students eligible for the National School Lunch Program and the percentage of students who received special education services), student behavior (such as attendance and discipline rates), and teacher factors (such as years of professional experience and mobility). From the Texas Accountability Rating System, the study used school accountability ratings for each study year. The accountability rating files included the overall and domain scores and ratings and school identification numbers, which permitted linking to other data sources used in the study.

Sample. For research questions 1 and 2, the sample included schools that received accountability ratings in 2017/18 or 2018/19. There were 7,859 schools that received *A*–*F* ratings in 2017/18 and 7,978 schools that received *A*–*F* ratings in 2018/19, which

represented approximately 98 percent of all public schools in the state. Summary statistics on these ratings are in table A2 in appendix A.

For research question 3, the sample also included 8,085 schools with nonmissing values of variables related to student behavior and teacher factors in the 2019/20 school year. In this school year, TEA did not assign ratings to schools; the state standardized assessment was not administered because of the COVID-19 pandemic.

Methodology. To address research question 1, the study team examined the extent to which student behaviors and teacher factors (predictors) were associated with schools' likelihood of meeting accountability expectations. The study team used statistical models to identify which predictors were most strongly associated with the likelihood of meeting accountability expectations (see appendix A for more details and appendix B for supporting analyses). There were separate models for elementary schools, middle schools, and high schools. To supplement research question 1, the study team examined schools' overall accountability scores (on a scale of 0–100) by school level and year. 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. Findings for this supplemental analysis are in appendix C.

For research question 2, the study team transformed only those predictors identified in research question 1 as most strongly associated with the likelihood of meeting accountability expectations into indicators (variables with values 0 or 1). Using statistical models, the study team identified the cutpoint (defined in box 1) of each continuous predictor that most accurately predicted whether schools that meet accountability expectations were correctly classified as meeting expectations, and schools that do not meet accountability expectations were correctly classified as not meeting expectations. From these analyses, the study team calculated the discrimination quality (defined in box 1) of each indicator and ranked each indicator based on how effectively it distinguished between schools that meet or do not meet accountability expectations. The analyses were performed with data from the 2018/19 school year because this was the first year that TEA applied the revised accountability system rules to schools.

For research question 3, the study team used indicators developed for research question 2 that demonstrated acceptable or better discrimination quality to identify schools that are and are not likely to meet accountability expectations in 2017/18, 2018/19, and 2019/20. For 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 prior year rating and current year rating: 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. The study team also examined year-to-year consistency of ratings across all three study years.

Limitations. This study has several limitations. First, the study used only student behaviors and teacher factors for which data were available in the Texas data system. Other measures that may be indicators of school performance were not available to the study team, such as measures of student well-being (such as mental health) and measures of community conditions (such as economic health, air quality, and access to safe drinking water).

Second, there may have been distortions in the attendance rates for 2019/20 because of school closures and other pandemic-related disruptions. These distortions may have produced inaccurate classification results because school attendance rates rose sharply in 2019/20 compared with previous school years as a result of differences in the collection and reporting of attendance data. For this school year, attendance data based on the attendance reporting periods prior to the onset of the pandemic might be more consistent with the attendance rates in previous school years. A potential extension of the current study would be to recalculate attendance rates using these attendance reporting periods.

Third, the study team inspected correlations between all predictors and school characteristics. However, these models might not fully account for interactions between the predictors and key school characteristics, such as the percentage of students in different racial/ethnic groups and the percentage of English learner students. For example, the analysis did not test whether the associations between student behavior (for example, attendance rates) and the likelihood of schools meeting accountability expectations differed for schools with high or low percentages of English learner students.

Fourth, this study describes correlational relationships, not causal relationships. Identifying indicators of low performance is not the same as identifying root causes of low performance. For example, high teacher turnover may be a good indicator of low performance but is likely a symptom rather than a cause of low performance.

Fifth, the analysis excluded schools that did not receive accountability ratings in 2017/18 and 2018/19 (which is approximately 2 percent of schools in the state). An eligible school may not receive an accountability rating for a variety of reasons, including the suspension of ratings because of a natural disaster that impacted schools in a given geographic region. Schools without

accountability ratings may be a unique group of schools that are at a higher risk of low performance. The exclusion of these schools limits the generalizability of the study's findings to schools that are eligible to receive accountability ratings from the regular accountability system.

Finally, future changes to the accountability system may limit the generalizability of the study's findings. For instance, in 2022, TEA assigned *A*-*C* ratings to schools with overall accountability scores of 70 or higher. Schools with an overall accountability score below 70 received a rating of "Not Rated" (TEA, 2022).

Findings

This section presents the main findings for the research questions addressed in the study. Results from supporting analyses are in appendix B.

The student attendance rate, chronic absenteeism rate, and prospective teacher turnover rate were associated with elementary, middle, and high schools' performance

Across elementary, middle, and high schools, three predictors were associated with the likelihood of meeting accountability expectations (receiving an accountability rating of *A*, *B*, or *C*) in both school years included in the study. Student attendance rate was positively associated with the likelihood of meeting accountability expectations, whereas the chronic absenteeism rate and the prospective teacher turnover rate were negatively associated with the likelihood of meeting accountability expectations in 2017/18 and 2018/19 (table 1). In high schools, additional predictors related to course enrollment and completion were consistently associated with the likelihood of meeting accountability expectations. The percentage of students who completed at least one advanced course, the average number of credits completed by students in grade 9, and the average number of advanced courses completed were positively associated with the likelihood of meeting accountability expectations, and the percentage of students who failed at least one course was negatively associated with the likelihood of meeting accountability expectations. Several other predictors were associated with the likelihood of meeting accountability expectations in four or five of the six possible combinations of school level and school year.

Table 1. Relationship between predictors and the likelihood of Texas schools meeting accountability expectations 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	↓	↓	↓	↓	–	↓
Teacher factors						
Average years of professional experience	–	–	↑	–	–	↑
Percentage of teachers with three or fewer years of professional experience	–	↓	↓	↓	↓	↓
Percentage of teachers who continued teaching: prospective[a]	–	–	↑	–	–	↑
Percentage of teachers who continued teaching: retrospective[b]	–	↓	↑	↑	↑	↑
Percentage of teachers who left the school: prospective[a]	↓	↓	↓	↓	↓	↓
Percentage of teachers who left the school: retrospective[b]	–	↓	↓	↓	–	↓

↑ Denotes predictors positively associated with the likelihood of meeting accountability expectations. ↓ Denotes predictors negatively associated with the likelihood of meeting accountability expectations. – Denotes predictors not associated with the likelihood of meeting accountability expectations. na is not applicable because the measure was not available for these grade levels.

Note: Full results are in tables B1 and B2 in appendix B. The study defines schools that met accountability expectations as those that received a rating of *C* or higher.

a. Prospective measures of teacher turnover and continuation compare teachers' employment and school assignment in the current school year with the subsequent school year.

b. Retrospective measures of teacher turnover and continuation compare teachers' employment and school assignment in the prior school year with the current school year.

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

For elementary schools, two indicators distinguished between schools meeting and not meeting accountability expectations; for middle and high schools, several additional indicators distinguished between schools meeting or not meeting accountability expectations

Focusing only on the predictors associated with the likelihood of meeting accountability expectations in the 2018/19 school year, the study team created indicators using cutpoints that most accurately predicted whether schools that did not meet accountability expectations were correctly classified as not meeting expectations and schools that met accountability expectations were correctly classified as meeting expectations. The study team then examined how well the indicators distinguished between schools meeting and not meeting accountability expectations (referred to as discrimination quality) across school years, including the year of suspended accountability ratings because of the COVID-19 pandemic (2019/20).

For each school level, the study team identified at least two indicators that had at least acceptable discrimination quality (table 2). Student attendance rate and chronic absenteeism rate were the only two indicators that provided at least acceptable discrimination quality across all school levels in the 2018/19 school year (table 2).[2] The attendance rate indicator with a cutpoint set near 95 percent achieved acceptable discrimination quality in elementary schools and excellent discrimination quality in middle schools. An attendance rate indicator with a cutpoint set near 93 percent achieved acceptable discrimination quality in high schools. A chronic absenteeism rate indicator with a cutpoint set near 10 percent achieved acceptable discrimination quality in elementary schools, whereas the cutpoints for middle and high schools were higher (11 and 14 percent, respectively). In middle schools, seven additional indicators achieved acceptable discrimination quality. In high schools, eight additional indicators achieved at least acceptable discrimination quality, with two of these indicators—the percentage of students who took at least one advanced course and the average number of advanced courses completed—achieving excellent discrimination quality.

[2] The study team focused on indicator discrimination quality for 2018/19 accountability ratings because the current accountability rating system first took effect in 2018/19 (HB 22, 85th Texas Legislature, 2017). The publication of school-level ratings for 2017/18 provided a preliminary description of how the rating system would impact schools, but those ratings were not used for accountability sanctions or monitoring. The 2018/19 school year was the first year in which the new accountability rating system had consequences for schools and could have generated responses about school and district leaders' behavior.

Table 2. Discrimination quality and cutpoints for selected indicators in Texas schools, 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	Acceptable	95.1	Excellent	92.8	Acceptable
Chronic absenteeism rate	10.1	Acceptable	11.2	Excellent	14.0	Acceptable
Course enrollment and completion						
Average number of course failures	na	na	na	na	0.6	Acceptable
Percentage of students who failed at least one course	na	na	na	na	27.2	Acceptable
Percentage of students who completed at least one advanced course	na	na	na	na	20.6	Excellent
Average number of credits completed by students in grade 9	na	na	na	na	6.3	Poor
Average number of advanced courses completed	na	na	na	na	0.4	Excellent
Student discipline						
Percentage of students with at least one in-school suspension	3.0	Poor	14.1	Poor	–	–
Percentage of students with at least one out-of-school suspension	1.2	Poor	7.1	Acceptable	–	–
Percentage of students with at least one expulsion	–	–	2.1	Acceptable	1.7	Poor
Percentage of students with two or more in-school or out-of-school suspensions	1.2	Poor	9.6	Acceptable	8.6	Poor
Average number of in-school suspensions per student	–	–	–	–	0.1	Poor
Average number of out-of-school suspensions per student	0.0	Poor	0.1	Acceptable	0.1	Poor
Average number of expulsions per student	0.0	Poor	0.0	Acceptable	–	–
Average number of in-school or out-of-school suspensions per student	0.0	Poor	0.4	Acceptable	0.4	Poor
Teacher factors						
Average years of professional experience	–	–	–	–	12.0	Acceptable
Percentage of teachers with three or fewer years of professional experience	24.6	Poor	27.5	Poor	28.5	Acceptable
Percentage of teachers who continued teaching: prospective[a]	–	–	–	–	90.3	Poor
Percentage of teachers who continued teaching: retrospective[b]	91.5	Poor	90.7	Poor	86.1	Acceptable
Percentage of teachers who left the school: prospective[a]	22.8	Poor	23.9	Acceptable	26.7	Acceptable
Percentage of teachers who left the school: retrospective[b]	14.0	Poor	16.9	Poor	24.6	Poor

– Denotes predictors not associated with the likelihood of meeting 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 had a nonzero association with a school's likelihood of meeting accountability expectations. The study defined schools that meet or do not meet accountability expectations as schools that received a rating of *C* or higher. Full results are in table B3 in appendix B.

a. Prospective measures of teacher turnover and continuation compare teachers' employment and school assignment in the current school year with the subsequent school year.

b. Retrospective measures of teacher turnover and continuation compare teachers' employment and school assignment in the prior school year with the current school year.

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

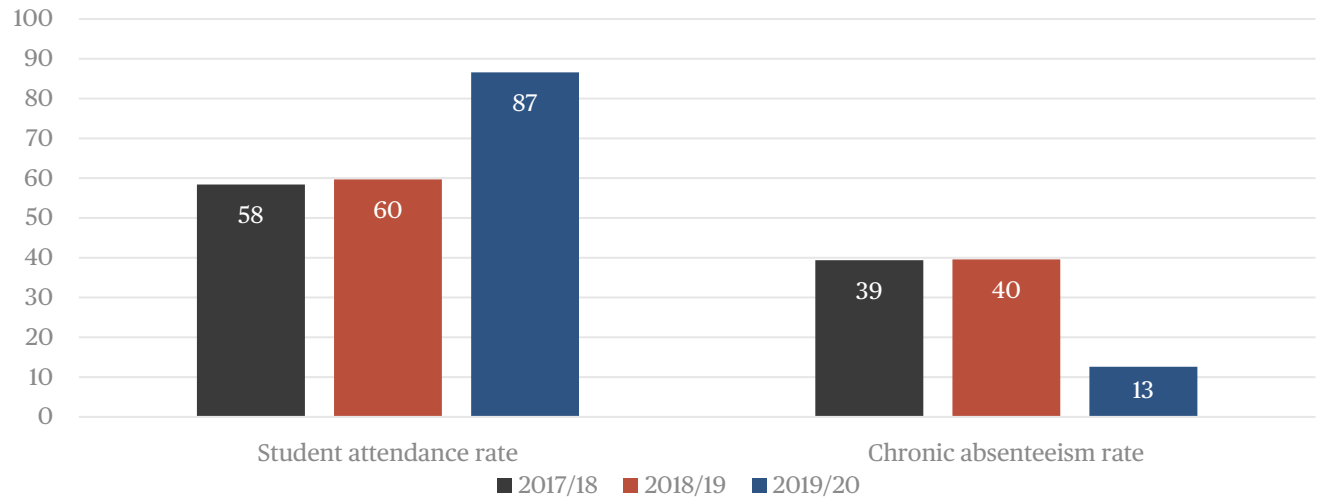
For indicators for elementary and middle schools, such as student attendance rate and chronic absenteeism rate, the percentages of schools above the indicator cutpoints were consistent between 2017/18 and 2018/19 but differed in 2019/20

For most indicators, the percentages of schools above each indicator cutpoint were consistent in 2017/18 and 2018/19 but differed in 2019/20, suggesting that the indicators were sensitive to disruptions caused by COVID-19.

For student attendance rate and chronic absenteeism rate, the percentage of elementary schools above the indicator cutpoint was consistent in 2017/18 and 2018/19 but differed in 2019/20. For elementary schools, the only indicators that exhibited at least acceptable discrimination quality were a student attendance rate slightly more than 95 percent and a chronic absenteeism rate slightly more than 10 percent. The percentage of elementary schools above the cutpoints for student attendance rate and chronic absenteeism rate were consistent in 2017/18 and 2018/19 (the difference was less than 5 percentage points) but changed in 2019/20 (figure 1). Fifty-eight percent of elementary schools in 2017/18 and 60 percent of elementary schools in 2018/19 had an attendance rate above the cutpoint, compared with 87 percent in 2019/20. Correspondingly, the percentages of elementary schools above the cutpoint for chronic absenteeism rate were consistent in 2017/18 and 2018/19 but fell by 27 percentage points, from 40 percent in 2018/19 to 13 percent in 2019/20.[3]

Figure 1. For student attendance rate and chronic absenteeism rate, the percentage of Texas elementary schools above the indicator cutpoint was consistent in 2017/18 and 2018/19 but differed in 2019/20

Percentage of elementary schools above the indicator cutpoint



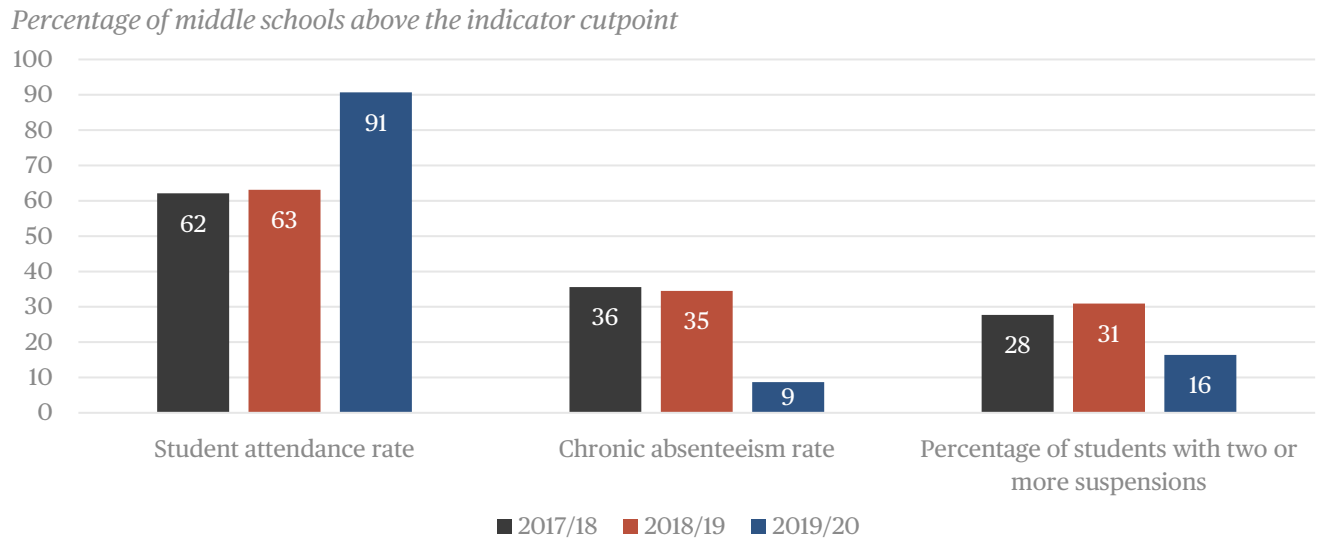
Note: The figure includes the indicators with at least acceptable discrimination quality as measured by the area under the curve statistic. The cutpoints for the attendance rate and chronic absenteeism rate indicators are 95.3 and 10.1 percent, respectively.
Source: Authors' analyses based on data provided by the Texas Education Agency.

For student attendance rate, chronic absenteeism rate, and the percentage of students with two or more suspensions, the percentages of middle schools above the indicator cutpoint were consistent in 2017/18 and 2018/19 but differed in 2019/20. For middle schools, the indicators with the highest discrimination quality were a student attendance rate above 95 percent, a chronic absenteeism rate above 11 percent (both with excellent discrimination quality), and

[3] Pandemic-related disruptions led to variation in whether students attended school in-person or remotely. Students could be counted as present if they physically arrived at school or checked in from where they were attending remotely. The significant increase in student attendance rates and the decrease in chronic absenteeism rates in 2019/20 suggests that remote attendance was a lower bar for students to meet than in-person attendance and likely is not comparable to in-person attendance before the pandemic.

the percentage of students with two or more in-school or out-of-school suspensions above .4 percent. For all three indicators, the percentage of schools above the cutpoint was similar in 2017/18 and 2018/19 but differed in 2019/20. In 2019/20, more than 90 percent of middle schools were above the indicator cutpoint for student attendance rate, compared with 62 percent in 2017/18 and 63 percent in 2018/19 (figure 2). Conversely, both the indicator for chronic absenteeism and the indicator for the percentage of students with two or more in-school or out-of-school suspensions identified a smaller percentage of schools in 2019/20 than during the two previous school years. Six other indicators for middle schools also reached acceptable discrimination quality but were not as high quality as the three indicators in figure 2. All these indicators identified similar percentage of schools above the cutpoints in 2017/18 and 2018/19 (see table B6 in appendix B). However, the percentage of schools identified by all six indicators differed by more than five percentage points between 2018/19 and 2019/20.

Figure 2. For student attendance rate, chronic absenteeism rate, and the percentage of students with two or more suspensions, the percentages of Texas middle schools above the indicator cutpoint were consistent in 2017/18 and 2018/19 but differed in 2019/20

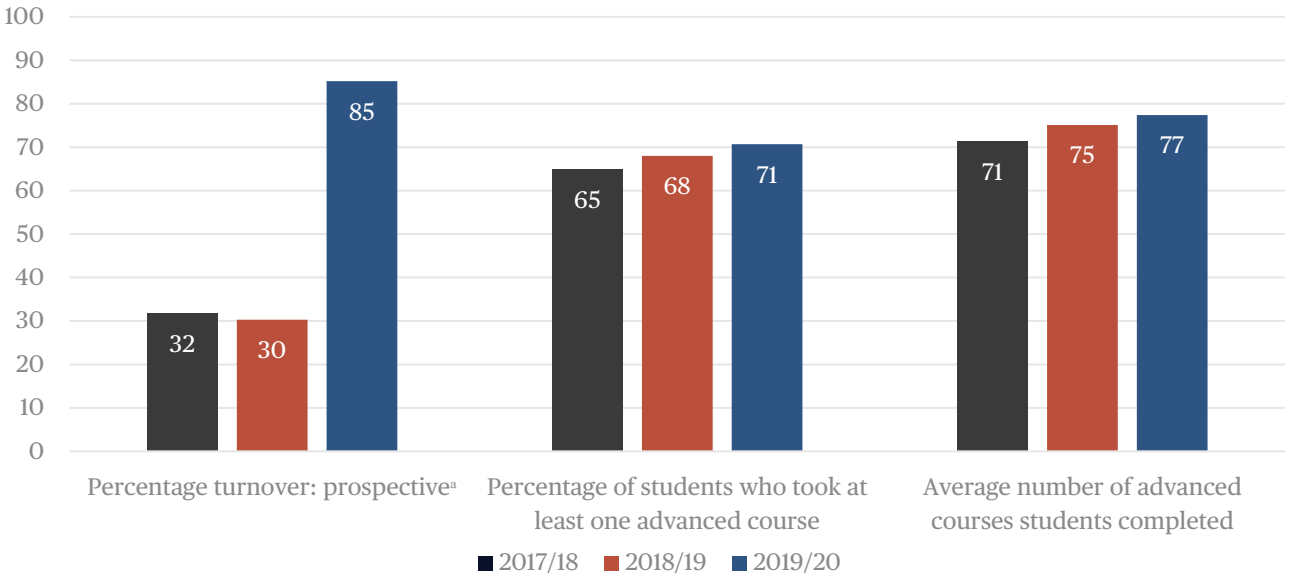


Note: The figure includes the three indicators with the highest and at least acceptable discrimination quality as measured by the area under the curve statistic. The cutpoints for each indicator are 95.1 percent for student attendance rate, 11.2 percent for chronic absenteeism rate, and 9.6 percent for the percentage of students with two or more suspensions. Suspensions include both in-school and out-of-school suspensions.
Source: Authors' analyses based on data provided by the Texas Education Agency.

For prospective teacher turnover rate, the percentages of high schools above the indicator cutpoint were consistent in 2017/18 and 2018/19 but increased in 2019/20; for two measures of advanced coursetaking, the percentages of high schools above the indicator cutpoint were consistent across time. For high schools, the three indicators with the highest discrimination quality were prospective teacher turnover rate above 27 percent, average number of advanced courses completed above 0.4 advanced courses, and percentage of students who took at least one advanced course above 21 percent. The percentage of schools that were above the cutpoint for the average number of advanced courses completed and the percentage of students who took at least one advanced course were consistent by year (figure 3). However, the percentage of schools above the cutpoint for teacher turnover increased from 30 percent in 2018/19 to 85 percent in 2019/20, which was a 55 percentage point increase. Seven other indicators for high schools also achieved acceptable discrimination quality. The percentage of schools above the indicator cutpoint for four of the seven remaining indicators differed by more than five percentage points between 2018/19 and 2019/20 (see table B6 in appendix B).

Figure 3. For prospective teacher turnover rate, the percentage of Texas high schools above the indicator cutpoint was consistent between 2017/18 and 2018/19 but increased in 2019/20; for two measures of advanced coursetaking, the percentage of Texas high schools above the indicator cutpoint was consistent between 2017/18 and 2019/20

Percentage of high schools above the indicator cutpoint



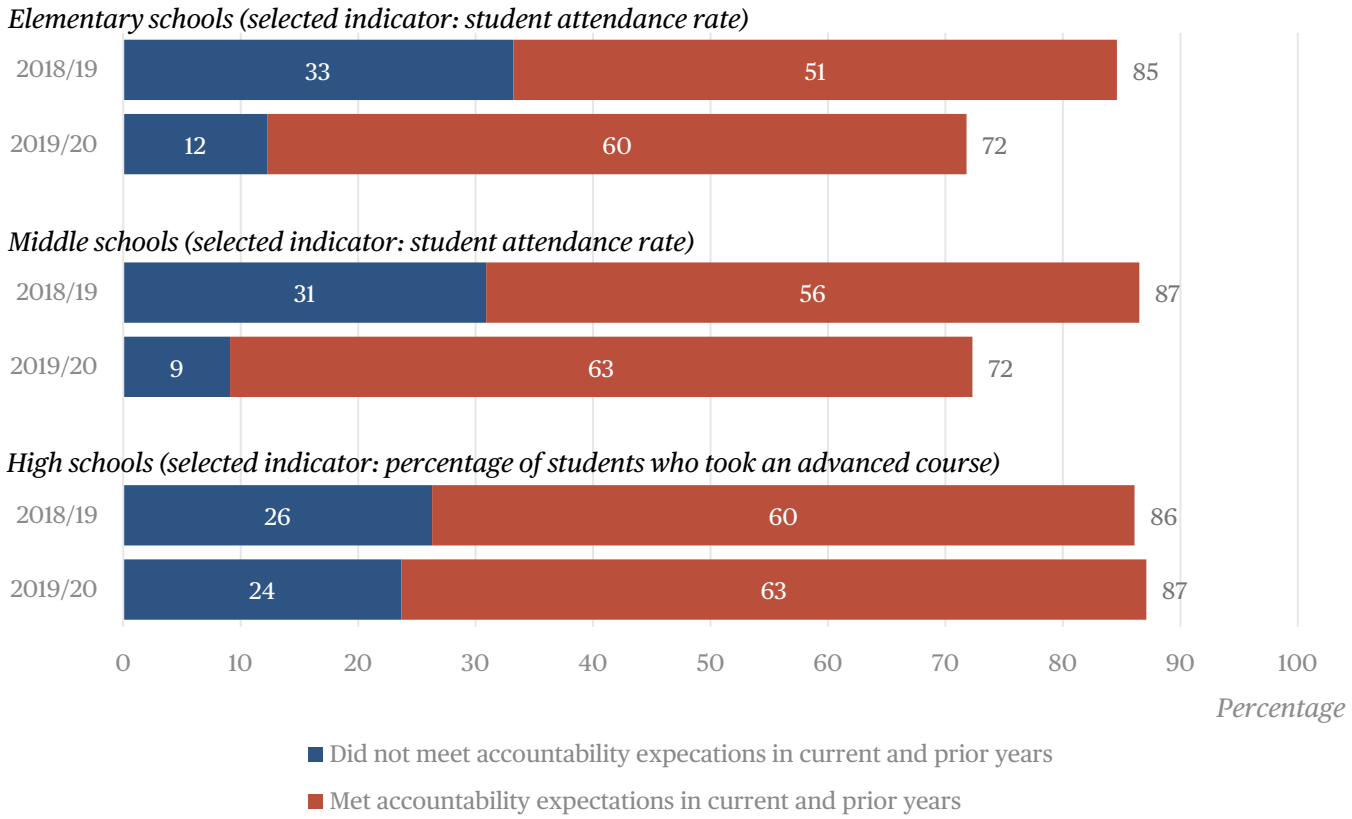
Note: The figure includes the three indicators with the highest and at least acceptable discrimination quality as measured by the area under the curve statistic. The cutpoints for each indicator are 26.8 percent for prospective teacher turnover, 20.6 percent for the percentage of students who took at least one advanced course, and 0.4 for the average number of advanced courses completed.
a. Prospective teacher turnover captures the percentage of teachers who did not return to the same school in the next school year.
Source: Authors' analyses based on data provided by the Texas Education Agency.

For elementary and middle schools, predicted ratings became inconsistent in 2019/20 for the indicator at each school level with the highest discrimination quality. Between 2017/18 and 2018/19, the percentage of schools predicted to meet or not meet accountability expectations using the indicator at each school level with the highest discrimination quality (student attendance rate for elementary and middle schools and the percentage of students who took at least one advanced course for high schools; see table B3 in appendix B for AUC statistics) was consistent. Eighty-five percent of elementary schools, 87 percent of middle schools, and 86 percent of high schools received the same predicted rating (of meeting accountability expectations or not meeting accountability expectations) in both school years (figure 4).

Between 2018/19 and 2019/20, the percentage of schools predicted to meet accountability expectations or not meet accountability expectations in consecutive years using the selected indicator remained consistent for high schools, but this percentage of schools with the same predicted rating (meeting accountability expectations or not meeting expectations) for consecutive years declined for elementary and middle schools to 72 percent (see figure 4). This finding of classification consistency for high schools but not middle and elementary schools is likely explainable by the sensitivity of the student attendance rate indicator to the COVID-19 pandemic. The student attendance rate increased during the pandemic (because of changes in the reporting of attendance), resulting in a decrease in the percentage of schools classified as not meeting accountability expectations in 2019/20. In contrast, advanced coursetaking was not sensitive to the pandemic, mostly remaining consistent across the three school years. The classification of schools as meeting accountability expectations or not meeting accountability expectations by other indicators varied between 2018/19 and 2019/20 (see tables B7–B9 in appendix B), with some indicators being more consistent than others. For example, the two teacher experience indicators (average years of professional

experience and the percentage of teachers with three or fewer years of professional experience) and advanced coursetaking indicators were more consistent than most of other high school indicators.

Figure 4. Texas elementary and middle schools' predicted ratings changed from 2018/19 to 2019/20 but high schools' ratings did not change (as measured by selected indicators)



Note: Indicators for each school level were selected based on their discrimination quality (see table 2 and table B3 in appendix B). Results for the remaining indicators are in tables B7–B9 in appendix B.
Source: Authors' analyses based on data provided by the Texas Education Agency.

Implications

To provide information for TEA staff to identify schools at risk for low performance at a time when they could most benefit from supports (that is, during the school year), the study identified indicators of school performance using student behaviors and teacher factors. For each school level, the study identified at least two indicators that had acceptable or better discrimination quality.

Based on schools' performance on each indicator, local support providers[4] and districts can use the indicators for ongoing monitoring that informs continuous improvement in schools. For example, education leaders at TEA may consider sharing the indicators by the end of each grading period with local support providers or districts that may then be able to provide direct supports to schools. If one or more indicators signal that a school is not on track to meet accountability expectations, the support provider could provide more intensive supports to that school or investigate the underlying causes of why the school is at risk of not meeting accountability expectations rather than waiting for the release of annual school accountability ratings. Findings from the study also can help stakeholders target supports to address specific areas of school performance. For example, if a school is above the

[4] Local support providers could include regional service centers or other organizations providing technical assistance to schools.

indicator cutpoint for teacher turnover for multiple years, TEA could focus its support on reducing teacher turnover rates using evidence-based teacher retention strategies, such as adjusting the rewards offered and promoting personal satisfaction through programs that foster mentoring, professional development, and career advancement opportunities (Guarino et al., 2006). Similarly, if a school is above the indicator cutpoint for chronic absenteeism, TEA could focus its supports on helping schools implement evidence-based strategies for reducing chronic absenteeism, such as sending parents mail or text messaging campaigns (Heppen et al., 2020; Rogers & Feller, 2018; Smythe-Leistico & Page, 2018), creating a positive school culture (Daily et al., 2020), and implementing student mentoring programs (Balfanz & Byrnes, 2018; Guryan et al., 2021). Some indicators identified by the study may be more difficult or expensive to change. For example, it may be challenging for schools that did not meet accountability expectations to recruit experienced teachers to improve school performance.

However, the indicators alone do not provide information about underlying factors that may contribute to low school performance. For example, the low performance of a school identified as not meeting accountability expectations by the teacher turnover indicator may result from other factors in addition to or instead of high turnover. In fact, teacher turnover might be a symptom of low performance rather than the cause of it. In such a case, indicators may provide a useful starting point for districts to examine the potential root causes of low performance.

Finally, TEA may prioritize indicators that have excellent or at least acceptable discrimination quality and indicators that were less sensitive to pandemic-related disruptions, such as the advanced coursetaking indicator at the high school level. Because the predictive quality of the indicators may be sensitive to the reason for the disruption in the accountability system, TEA should carefully evaluate the extent to which the selected indicators are potentially impacted by the cause of the disruption. For instance, pausing accountability rating assignments during a transition to a new assessment system (as done in the 2011/12 school year) is unlikely to distort the collection and measurement of student attendance data, whereas natural disasters (such as hurricanes or public health crises) may. In addition, leaders at TEA may consider applying these indicators to the 2021/22 data to see if these indicators still have acceptable discrimination quality. They also may use studies that replicate this methodology with future years of data to consider adjusting the cutpoints for indicators that are sensitive to school disruptions, which may result from inconsistent reporting, a change in behaviors, or a combination of both.

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