



Teacher Effectiveness and Students' Perceptions of School Climate

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AUSTIN INDEPENDENT SCHOOL DISTRICT
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Overview of Analysis

Recent reports from the nationwide Measures of Effective Teaching project¹ identified student ratings of classroom climate as a positive correlate with teacher effectiveness (i.e., teachers' value-added scores). To continue efforts in Austin Independent School District (AISD) to identify factors contributing to effective teaching, a sample of elementary school students' Spring 2010 ratings of six student climate dimensions² were matched with their teachers and correlated with their teachers' net student growth in reading, mathematics (math), and science.

Of the 66,621 students in Grades 3—11 who completed the student climate survey, 5,074 elementary school students' responses were linked to their respective teachers' net student growth. Given the strong relationship between economic disadvantage and student achievement (Cornetto & Schmitt, 2009), analyses considered school percentage of students with economic disadvantage.

Regardless of economic disadvantage, students' ratings of behavioral environment were positively related to their teachers' 2010 reading net growth (Table 1). Students' ratings of *teacher support* were positively related to their teachers' net growth in all subject areas in 2010 at schools with high a concentration of economically disadvantaged students ($\geq 80\%$), and students' ratings of their *academic self-confidence* were pos-

Table 1. Correlations of Spring 2010 elementary school student climate ratings by teacher with Spring 2010 average teacher net growth.

	Reading (n = 145)		Math (n = 104)		Science (n = 52)	
	<80% Econ. Dis.	$\geq 80\%$ Econ. Dis.	<80% Econ. Dis.	$\geq 80\%$ Econ. Dis.	<80% Econ. Dis.	$\geq 80\%$ Econ. Dis.
Behavioral environment	+	+	—	+	+	—
Teacher support	—	+	—	+	—	+
Adult fairness and respect	—	+	—	—	—	—
Student engagement	—	—	—	—	—	—
Teacher expectations	—	—	—	—	—	—
Academic self-confidence	+	—	—	—	+	—

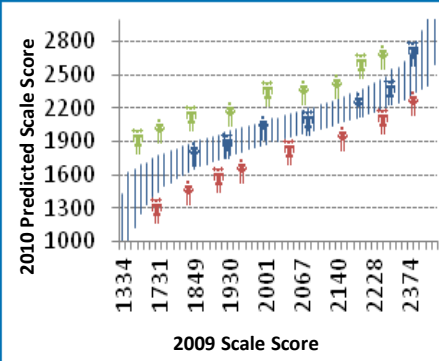
Note. Correlations were conducted with teachers for whom at least 10 students with student climate data and TAKS growth data were available. + indicates a positive relationship between variables at $p < .05$; — indicates that there is not a significant relationship between variables.

¹Please review The Met Project at <http://www.metproject.org/>

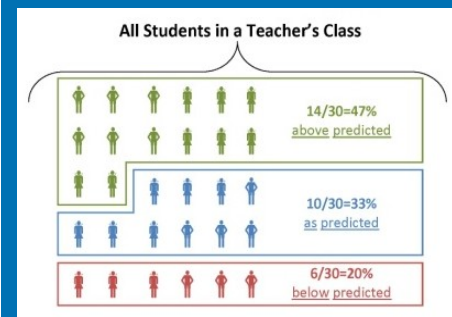
²For more information on AISD's student climate survey, please visit: http://www.austinisd.org/inside/accountability/evaluation/survey_reports.phtml

Computing Teacher Growth

Using a prediction equation derived from 2009 and 2010 Texas Assessment of Knowledge and Skills (TAKS) scores and the conditional standard error of measurement associated with each score, a prediction interval was computed for each 2010 score. Students either scored *above* (green), *within* (blue), or *below* (red) the interval that was predicted based on their prior performance.



Next, the percentage of each teacher's students who scored above, within, or below what was predicted was computed. Net growth was calculated by subtracting the percentage below predicted from the percentage above predicted.



itively related to their teachers' net growth in reading and science at schools with less student economic disadvantage (<80%). Additionally, elementary school students who felt respected in their classroom and safe in school (i.e., students with favorable ratings of behavioral environment) had teachers with greater net growth in reading and math at higher poverty schools, and greater net growth in reading and science at lower poverty schools, than did students at similar schools who provided less favorable ratings of behavioral environment. Students attending higher poverty schools who felt that adults in their school graded fairly and addressed discipline issues equitably (i.e., adult fairness and respect) had teachers with better net growth in reading than did students who rated adult fairness and respect and student engagement less favorably.

How are student ratings different for teachers in the top versus the bottom quartile of student growth?

Teachers were divided into quartiles based on their net student growth to determine if high performing teachers (e.g., those with growth in the top quartile) had more students who reported very favorable ratings³ on the student climate survey than lower performing teachers (e.g., those with growth in the bottom quartile). Due to small cell sizes, both effect sizes and t-tests were computed to estimate how meaningful the differences were between student ratings of teachers in the top and bottom quartiles (Table 2). Results should be interpreted with caution due to small cell sizes.

At high poverty schools, teachers in the top quartile had more students who provided very favorable ratings of school climate than did teachers in the bottom quartile. Results were mixed for schools with less poverty. However, regardless of school poverty, teachers in the top quartile in reading, math, and science had more students who rated their behavioral environment very favorably than did their peers in the bottom quartile.

Table 2. Percentage of elementary students with very favorable ratings of climate dimensions by school economic disadvantage and teachers' net growth quartiles.

	Reading				Math				Science			
	<80% Econ. Dis.		≥80% Econ. Dis.		<80% Econ. Dis.		≥80% Econ. Dis.		<80% Econ. Dis.		≥80% Econ. Dis.	
	Bottom 25% (n = 5)	Top 25% (n = 23)	Bottom 25% (n = 33)	Top 25% (n = 16)	Bottom 25% (n = 11)	Top 25% (n = 8)	Bottom 25% (n = 15)	Top 25% (n = 18)	Bottom 25% (n = 6)	Top 25% (n = 4)	Bottom 25% (n = 7)	Top 25% (n = 9)
Behavioral environment	20%	65% ††	18%	63% ††*	27%	50% †	7%	39% ††*	33%	75% ††	0%	44% ††
Teacher support	80%	74%	82%	94% †	73% †	63%	87%	100% ††	50%	50%	86%	100%
Adult fairness and respect	100% †	91%	85%	100% ††	100% †	88%	93%	94%	100% ††	75%	86%	100% ††
Student engagement	20%	26%	61%	100% ††*	18%	38% †	53%	67% ††	33%	50% †	43%	67% †
Teacher expectations	100%	100%	97%	100% †	100%	100%	100%	100%	100%	100%	100%	100%
Academic self-confidence	100% †	96%	85%	100% ††*	100%	100%	93%	94%	100%	100%	88%	89%

Note. Percentages in Table 2 reflect the percentage of students who rated climate very favorably with an average rating of at least 3.25 on a 4.0 scale (from 1, never, to 4, always). * Indicates a statistically significant difference between teacher quartiles within the same level of economic disadvantage. † Indicates a small but meaningful effect size (≥ .20 to .49), and †† indicates a meaningful effect size (≥ .50) between teacher quartiles within the same level of economic disadvantage. Differences that are statistically significant with a meaningful effect size are displayed in bold.

³Elementary school students historically exhibit high ratings of student climate; therefore, although a cut point of 3.0 is generally used to indicate favorable responses, a more rigorous cut point of 3.25 was used to differentiate very favorable responses in these analyses.