

Comparing STAAR™ Passing Rates for STEMscopes and Non-STEMscopes Districts in Texas

The following report includes results comparing STEMscopes and non-STEMscopes districts on the science component of the 2018-2019 State of Texas Assessment of Academic Readiness (STAAR™). Districts were identified as STEMscopes districts if they had a subscription to STEMscopes for the students in the tested grades (i.e., 5th grade) and showed usage of STEMscopes based on the analytics data. The state of Texas creates benchmarks for proficiency in science and identifies students as not proficient, approaching grade-level proficiency, meeting grade-level proficiency, and mastering grade-level proficiency. The percent of students in each of these categories is used to determine the district's achievement in science. The percentage of students who approach grade-level performance is used by the state as the district passing rate.

Elementary School STAAR Results

The [state average passing rate for all Texas school districts](#) that include 5th grade ($N = 1,149$) was 70%. Of these districts, 427 districts used the STEMscopes science curriculum during this school year, and 721 districts used either a district-created science curriculum or purchased a different science curriculum. The rates of proficiency for these two groups of districts are found in the table below. The average passing rate for the STEMscopes districts was 74%, and the average passing rate for the non-STEMscopes districts was 69%. STEMscopes districts also had higher rates of students who met and mastered grade-level performance.

	Approaches	Meets	Masters
STEMscopes Districts ($n = 427$)	74%	47%	22%
Non-STEMscopes Districts ($n = 721$)	69%	40%	17%

In addition, achievement for specific subgroups of students was examined. In the table below, STEMscopes districts had higher passing rates for economically disadvantaged, minority, and students with limited English proficiency (LEP) compared to districts that did not have STEMscopes.

	STEMscopes Districts	Non-STEMscopes Districts
Economically Disadvantaged students	67%	63%
African American students	60%	54%
Latino students	69%	63%
LEP students	58%	54%

Follow-up Analysis on Elementary Results

For the fifth year in a row, a research follow-up study was conducted to ensure that these differences remained statistically significant after accounting for other important variables that influence student achievement. Specifically, multiple regression analysis was utilized to recalculate these passing rates taking into account 2017-2018 passing rates as well as important district demographic, including the size of the district, if the whether the district was a charter school district, average teacher experience, district attendance rate, and demographic information of students (i.e., race/ethnicity, socioeconomic status, LEP status).

Results showed that, when accounting for these important variables, districts that used STEMscopes continued to have significantly higher overall science passing rates compared to districts that did not use STEMscopes (see table below). Specifically, STEMscopes districts had a weighted passing rate of 72%, and non-STEMscopes districts had a weighted passing rate of 69%. In other words, **using the STEMscopes curriculum increased passing rates by 3%.**

Multiple Regression Results

	B	Standard Error	p-value
STEMscopes	3.21*	0.76	<0.01
2017-2018 Passing Rate	0.65*	0.03	<0.01
Number of Students	<0.01	0.00	0.16
Charter District	2.34	1.59	0.14
Students %Black	-6.84*	3.33	0.04
Students %Latino	-3.51	2.05	0.09
Students %Economically Disadvantaged	-4.61	2.72	0.09
Students %LEP	-0.19	3.96	0.96
District Attendance Rate	1.97*	0.03	<0.01
Average Teacher Experience in District	0.34**	0.16	0.03

Elementary Passing Rates for Student Subgroups

These analyses were also conducted examining the passing rates for subgroups of students including students who were economically disadvantaged, minority students, and students with limited English proficiency (LEP). Economically disadvantaged, African American, Latino, and LEP students had significantly higher passing rates in STEMscopes districts than in non-STEMscopes districts (see table below). **These differences range from an increase of 3 to 4 percentage points for all four subgroups.**

Differences in STAAR Passing Rates for Student Subgroups

	STEMscopes Districts	Non-STEMscopes Districts	B	Standard Error	p-value
Economically Disadvantaged	66.1	62.4	3.66*	0.90	<0.01
African American	59.7	55.8	3.99*	1.64	0.02
Latino	67.9	64.5	3.39*	1.00	<0.01
LEP	57.1	53.6	3.52*	1.48	0.02

Conclusion

For the fifth school year in a row, districts that used STEMscopes had higher 5th grade passing rates than districts that did not use STEMscopes. Controlling for previous year achievement and several important demographic variables, STEMscopes districts increased the proficiency rate of their students by 3%, resulting in an additional 10,158 students considered proficient. In addition to overall passing rates, results showed that passing rates for economically disadvantaged, minority, and LEP students were higher in STEMscopes districts than non-STEMscopes districts. These findings show continued evidence that STEMscopes is associated with increases in student science achievement.