



Comparing Biology EOC STAAR Results for STEMscopes and Non-STEMscopes Districts in Texas

The following report includes results comparing STEMscopes and non-STEMscopes districts on the Biology End-of-Course assessment of the 2017-2018 State of Texas Assessment of Academic Readiness (STAAR™). Districts were identified as STEMscopes districts if they had a subscription to STEMscopes for Biology and showed usage of STEMscopes based on the analytics data. The state of Texas creates benchmarks for proficiency in science and identifies students as approaching grade-level proficiency, meeting grade-level proficiency, or mastering grade-level proficiency. The percentage of students in each of these categories is used to determine the district's achievement in science.

BIOLOGY EOC RESULTS

Of the 1,074 districts that received scores on the Biology EOC STAAR assessment (410,273 students assessed), 366 districts used the STEMscopes science curriculum during this school year, and 708 districts used either a district-created science curriculum or purchased a different science curriculum. The rates of proficiency for these two groups of districts as well as the state averages are found in the table below. While there were little differences in the rates of students who approached proficiency, STEMscopes districts had higher percentages of students who met or mastered proficiency in science compared to non-STEMscopes districts and the state average.

| | Approaches | Meets | Masters |
|----------------------------------|------------|-------|---------|
| STEMscopes Districts (n=366) | 87.3% | 58.9% | 19.7% |
| Non-STEMscopes Districts (n=708) | 87.2% | 57.0% | 17.9% |
| State of Texas (n=1,074) | 87.2% | 57.7% | 18.5% |

Follow-up Analysis of Biology EOC Results

To ensure that these differences were statistically significant after accounting for other important variables that influence student achievement, several analyses were conducted. Specifically, multiple regression analysis was utilized to recalculate these proficiency rates, taking into account the 2016-2017 proficiency rates as well as important district demographic variables, including the size of the district, whether the district was a charter school district, high school dropout rates, and demographic information of students (i.e., race/ethnicity and socioeconomic status).

Even when accounting for these important variables, districts that used STEMscopes continued to demonstrate significantly higher rates of students who met or mastered proficiency. Specifically, STEMscopes districts had a weighted rate of 58.5% of students who met proficiency (compared to 56.8% of students who met proficiency in non-STEMscopes districts) and 19.4% of students who mastered proficiency (compared to 18.1% of students who mastered proficiency in non-STEMscopes districts).

Differences in STAAR™ Passing Rates for Economically Disadvantaged Students

| | STEMscopes Districts | Non-STEM-scopes Districts | B | Standard Error | p-value |
|------------------------|-----------------------------|----------------------------------|----------|-----------------------|----------------|
| % Approach Proficiency | 87.2 | 86.8 | 0.46 | 0.46 | 0.32 |
| % Meet Proficiency | 58.5 | 56.8 | 1.74* | 0.79 | 0.03 |
| % Master Proficiency | 19.4 | 18.1 | 1.28* | 0.59 | 0.03 |

**Indicates statistical significance with $p < .05$*

CONCLUSION

In the 2017-2018 school year, districts that used STEMscopes for Biology had higher rates of students who met and mastered proficiency on the Biology EOC STAAR assessment than districts that did not use STEMscopes, controlling for previous year achievement and several important demographic variables. Specifically, using the STEMscopes curriculum was associated with an increase of 1.7% of students who met proficiency and 1.3% of students who mastered proficiency. These results translate to approximately 4,480 additional students meeting proficiency and an additional 3,426 students mastering proficiency in districts that used STEMscopes.