

## 2017 STEMscopes Case Study Brief

Findings from the **State of Texas 2015-2016 STAAR™ (State of Texas Assessment of Academic Readiness) Release Tests**, have revealed that STEMscopes district-users in the state of Texas have higher passing rates than districts that do not use STEMscopes. Analyses were using data from the 2015-2016 school year show that STEMscopes districts had a passing rate of 73.3% vs. 69.2% for districts without STEMscopes on the science STAAR. Subgroups including economically disadvantaged, Latino, LEP, and Bilingual/ESL students demonstrated that these populations had significantly higher passing rates in STEMscopes districts. These differences ranged from an increase of 2.8 percentage points to 4.8 percentage points.

Findings from **Charlotte County, Florida 2015-2016** with Charlotte County Public Schools (CCPS) and a Math-Science Partnership (MSP) grant that gave elementary school teachers STEMscopes curriculum and materials had profound impacts on teacher growth and proficiency rates in STEM-teaching domains. As part of the MSP grant, a STEM lab teacher from each elementary campus participated in a train-the-trainer model of professional development conducted by ALI. Florida Gulf Coast University evaluated the project and found teachers felt that the professional development they received by ALI improved their knowledge and skills in STEM. Additionally, student achievement in science was examined using the 5<sup>th</sup> grade results from the Florida Statewide Science Assessment. The proficiency rate increased to 57% (up 7% from 2014-2015) in the 2015-2016 school year when the grant project was conducted.

**A 2014-2015 Waco ISD Prekindergarten STEMscopes Early Explorer Implementation Study** leveraged research from 1,271 kindergarten students in Waco, Texas. Of these students, 905 of them were students in the Waco ISD PreK program in 2014-2015; 365 new student enrolled in kindergarten who did not participate in Waco ISD PreK program. Student academic progress was measured using the CLI Engage science and engineering assessment. In the fall, students scored an average of 20.2 points; this increased to 21.7 points in the winter, and 22.3 points in the spring. On average, students gained 2.1 points across the school year, which is equivalent to one standard deviation. However, it is important to take into account important demographic variables known to be associated with academic achievement to determine if this growth was significant above and beyond these important variables. Therefore, student growth in science achievement was calculated using growth curve modeling to parse out the variance associated with demographic variables. Results showed that all students did significantly grow in their science and engineering achievement throughout the 2015-2016 school year. After controlling for demographic variables, students grew an average of 1.14 points with STEMscopes Early Explorer.

Findings from **2014-2015 STEMscopes Early Explorer Implementation Study across a Large, Public School District PreK Program**: using Early Explorer, teachers reported spending an average of 36 minutes per day on STEM instruction, compared to the national average of 1-3 minutes spent on math and science in preschool classrooms. Integration of STEM instruction increased over time as teachers became more comfortable with the curriculum components and including them in their daily schedule. The Ramp Up and Round Up activities were the first to be implemented, followed by Wrap Up and Keep it Up. In addition to these components, teachers reported regularly using the non-fiction and fiction big books as well as the vocabulary cards during literacy activities.