

Evaluation of the FASTalk Program

Findings Brief May 2020

Report prepared by Adam Harris

Adam Harris is an experienced analyst with a background in data analytics for a variety of different organizations that range from governments and advisory firms to other educational non-profits and marketing consulting companies. He specializes in statistical analysis, dashboard development and distribution, and insight-driven reporting. He holds a bachelor's degree in economics and film and media studies from Washington University in Saint Louis.

Introduction

This brief outlines the key findings from the evaluation of Family Engagement Lab's 2018-19 implementation of the FASTalk program in Redesign Schools (RSL; formerly Celerity Schools) in Baton Rouge, Louisiana. The FASTalk program uses text messages to help families learn strategies to support 3rd, 4th, and 5th grade literacy development, with weekly messages aligned with the school's ELA curriculum. At the beginning of the 2018-19 school year, Family Engagement Lab trained RSL 3-5th grade teachers on the FASTalk program aligned with the ELA Guidebooks curriculum. Teachers then personally signed up families who received three text messages per week to support literacy development at home. Weekly messages were sent for 8 weeks from January-March 2019.

Family Engagement Lab launched FASTalk at two RSL schools during the 2018-19 school year. A total of 99 students were enrolled in the program. 59 students were in 3rd grade, 30 students were in 4th grade, and 10 students were in 5th grade. FASTalk students made up 33% of the total 3rd-5th grade enrollment at the two schools with FASTalk.

This evaluation uses a standard regression and t-testing within a quasi-experimental research design (non-randomized) to help determine the relationship between FASTalk and literacy assessment performance during the 2018-19 school year. Data from 231 students were included in the current analyses: 69 FASTalk students and 162 students who did not participate in FASTalk. (Note: while the original dataset included 301 students, 70 students were excluded due to incomplete observations). The evaluation focuses specifically on the data collected from iSTEOP literacy assessments in the fall and spring of the academic year. The evaluation analyzes student growth between these assessments. Broadly, the evaluation explores two questions:

- Did FASTalk increase achievement among all participating students compared to a matched comparison group of non-participating students?
- Did the effects of FASTalk vary significantly by grade?

Key Findings

Finding 1: It is very likely that FASTalk positively affected participants' spring literacy assessment scores. There was a 95% likelihood that FASTalk had a positive effect on students' scores on the spring assessment based on the confidence interval of all three of the regression models produced as a part of this review ($p < .05$). There were not enough participants within each of the individual grades to produce conclusive results for each grade level independently.

Finding 2: When comparing FASTalk participants and non-participants with similar characteristics, a statistically significant ($p = .01$, Table 9) larger portion of FASTalk participants scored at or above average in the spring assessment despite scoring slightly lower than non-participants in the fall assessment. This conclusion stems from the 95% likelihood that the FASTalk group will outperform non-participating groups based on two-sided t-tests completed on participants grouped by the third and fourth grade. 92% of the 3rd grade FASTalk participant group scored at or above average while only 65% of non-participants with similar characteristics scored at or above average in the spring assessment. 100% of the 4th grade FASTalk participant group scored at or above average while only 84% of non-participants with similar characteristics scored at or above average in the spring assessment. The 5th grade group of participants was too small to produce statistically significant results.

Finding 3: When comparing FASTalk participants and non-participants, FASTalk participants had a statistically significant ($p = .02$, Table 5) higher average score (4.6 out of 8) than non-participants (3.9 out of 8) in the spring assessment. In addition, an analysis of the statistical dispersion revealed that 75% of FASTalk participants achieved a four or higher in the spring assessment, but only 55% of non-participants achieved a four or higher in the spring assessment. The fall assessment was completed earlier on, and FASTalk participants had a lower average score (3.3) than non-participants (3.4) on that initial test, which supports the finding that FASTalk had a positive effect on participants' assessment scores. FASTalk participants also had higher average scores than non-participants within each of the three grades, but these samples were not large enough to produce statistically significant results independently.

Key limitations

This methodological approach has some important limitations that should inform the interpretation of the results.

- Given that participating families and teachers opted in to participate in the FASTalk program, self-selection bias may affect the results of the evaluation.
- There were a total of 231 participants in the spring assessment, but more participants are needed to obtain more conclusive results within different subgroupings like grade.

Technical Appendix

This appendix provides the underlying regression and distribution data supporting this analysis. Reach out to the FASTalk team for the full dataset.

Table 1: Spring Assessment Scores

Non-FASTalk students' mean score = 3.9, FASTalk students' mean score = 4.6

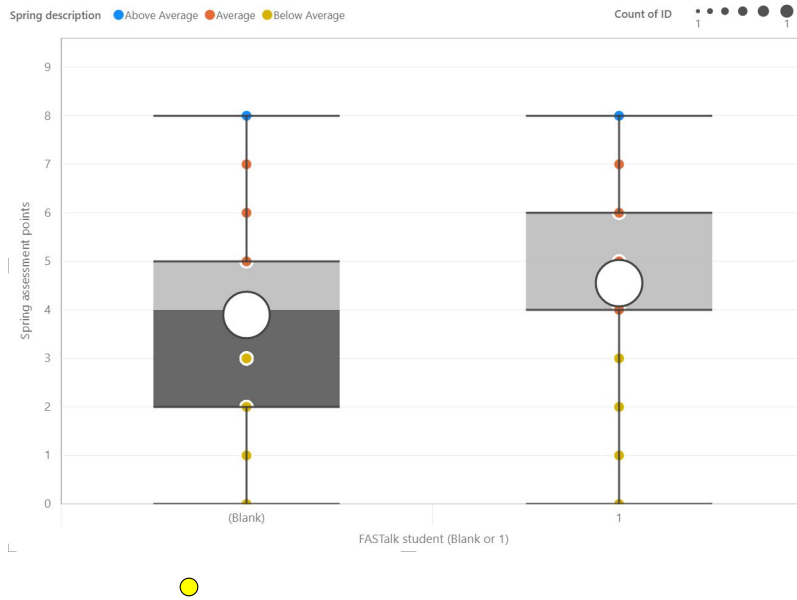


Table 2: Fall Assessment Scores

Non-FASTalk students' mean score = 3.4, FASTalk students' mean score = 3.3

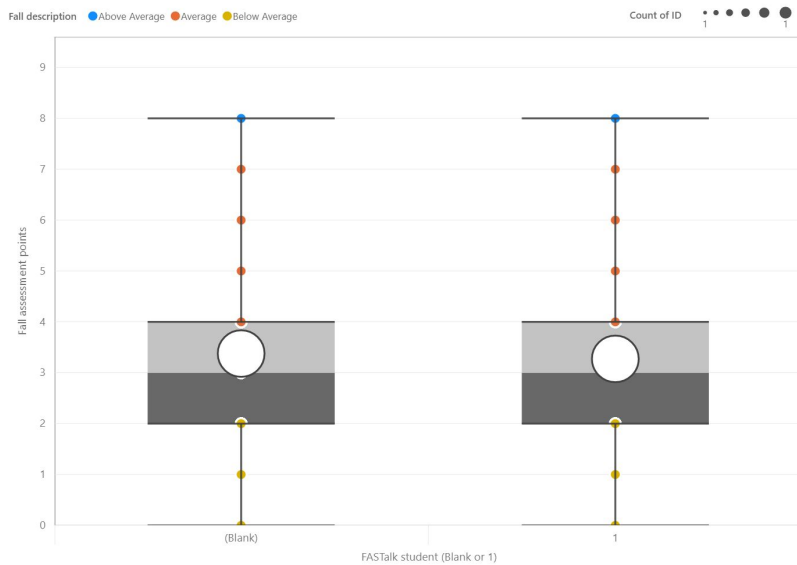


Table 3: Spring Assessment Scores by Grade

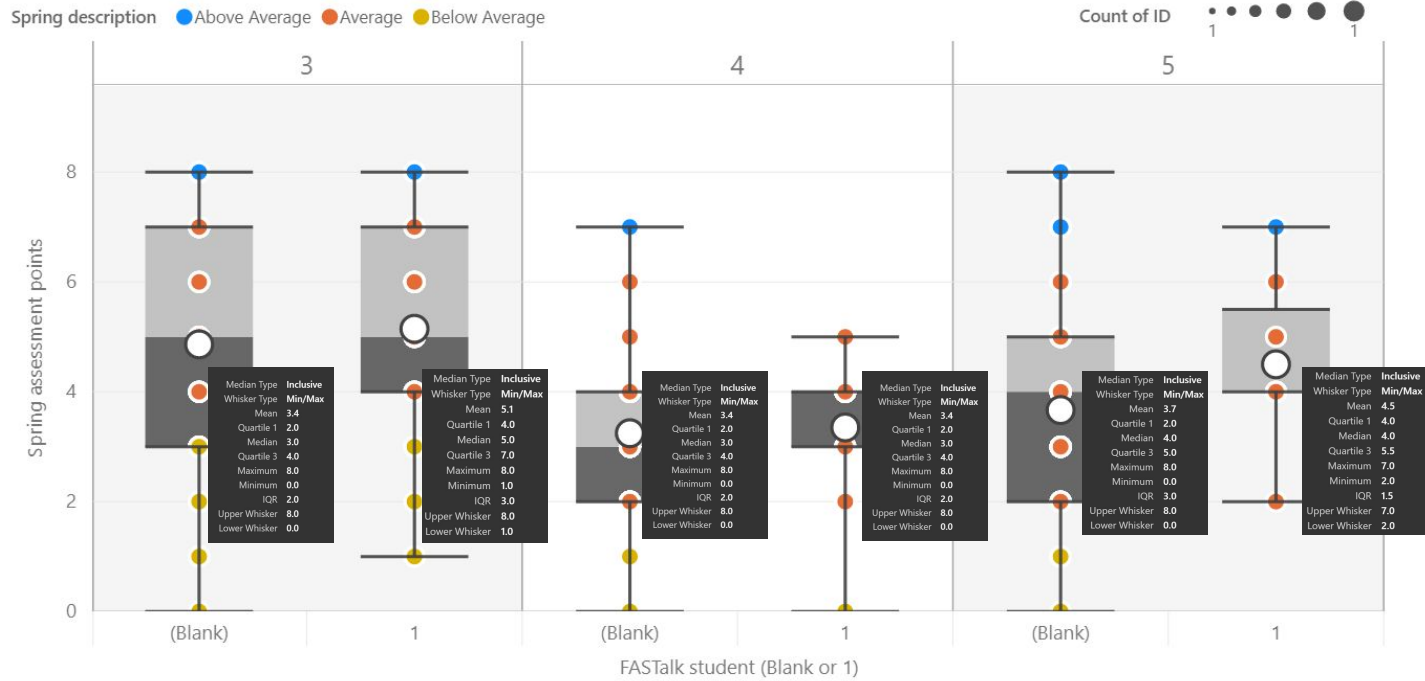


Table 4: Fall Assessment Scores by Grade

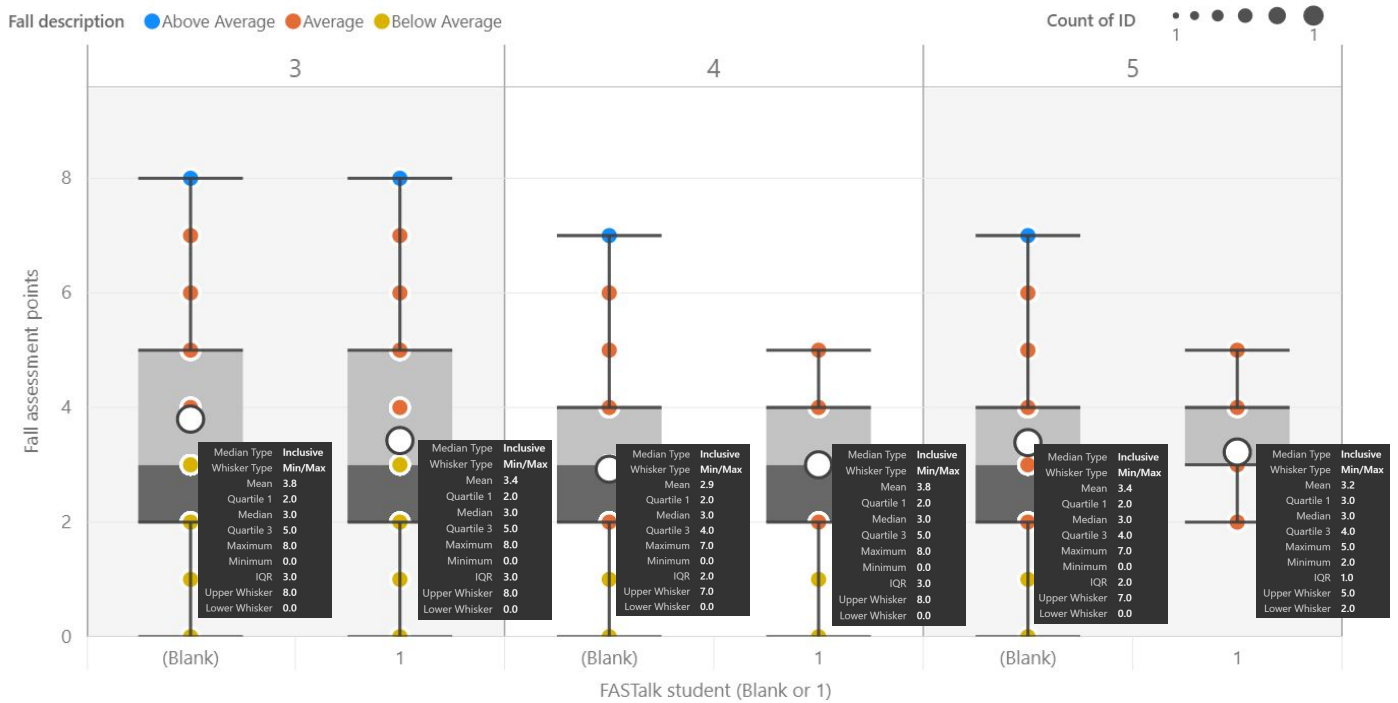


Table 5: Primary Regression

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.272412861							
R Square	0.074208767							
Adjusted R Square	0.066087791							
Standard Error	1.977528495							
Observations	231							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	2	71.46978887	35.73489443	9.137912669	0.000152226			
Residual	228	891.6211202	3.910618948					
Total	230	963.0909091						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	4.072228525	0.162979209	24.98618414	3.20547E-67	3.751090511	4.393366538	3.751090511	4.393366538
Special Education (0 or 1)	-1.435051052	0.39868126	-3.599494622	0.000391123	-2.220621854	-0.649480249	-2.220621854	-0.649480249
FASTalk student (0 or 1)	0.644878843	0.284296036	2.268335685	0.024244975	0.08469534	1.205062347	0.08469534	1.205062347

Table 6: Secondary Regression

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.200967767							
R Square	0.040388043							
Adjusted R Square	0.019063333							
Standard Error	2.026703456							
Observations	231							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	5	38.89735729	7.779471458	1.893955086	0.09634048			
Residual	225	924.1935518	4.107526897					
Total	230	963.0909091						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 90.0%</i>	<i>Upper 90.0%</i>
Intercept	2.409782051	1.071135676	2.249744926	0.02543278	0.299041303	4.5205228	0.640636448	4.178927654
School (0 for A, 1 for B)	-0.241300443	0.273233522	-0.883128984	0.378109178	-0.779724418	0.297123533	-0.692587702	0.209986817
Male (0 for M or 1 for F)	0.381795408	0.269299659	1.417734464	0.157651681	-0.148876641	0.912467458	-0.062994471	0.826585288
Lunch Status	0.267066722	0.531451655	0.502523079	0.615791101	-0.780192453	1.314325897	-0.610707569	1.144841013
English Proficiency (Replaced 0 with 0)	1.178125302	1.055567485	1.116106094	0.265567259	-0.901937339	3.258187943	-0.565307035	2.921557638
FASTalk student (0 or 1)	0.681352127	0.296624809	2.297016655	0.02253735	0.096834137	1.265870116	0.191430552	1.171273701

Table 7: Tertiary Regression

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.298176308							
R Square	0.08890911							
Adjusted R Square	0.06450489							
Standard Error	1.979203656							
Observations	231							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	6	85.62755595	14.27125933	3.643185869	0.001803413			
Residual	224	877.4633531	3.917247112					
Total	230	963.0909091						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 90.0%	Upper 90.0%
Intercept	2.62340138	1.047858377	2.503583916	0.013007504	0.558480175	4.688322584	0.892669877	4.354132883
School (0 for A, 1 for B)	-0.263997356	0.266910662	-0.98908509	0.3236887	-0.789974431	0.26197972	-0.704849575	0.176854863
Male (0 for M or 1 for F)	0.24020157	0.266164169	0.902456443	0.367783836	-0.28430446	0.764707599	-0.199417679	0.679820819
Lunch Status	0.062291634	0.5223715	0.119247765	0.905185942	-0.96709937	1.091682638	-0.800501307	0.925084575
English Proficiency (Replaced 0 with 0)	1.415532096	1.03311731	1.370156208	0.172009819	-0.620340199	3.451404392	-0.290851813	3.121916006
Special Education (0 or 1)	-1.405872697	0.407040542	-3.453888625	0.000660677	-2.20799125	-0.603754144	-2.078175275	-0.733570119
FASTalk student (0 or 1)	0.661206504	0.289731538	2.282135076	0.023420287	0.090258361	1.232154648	0.182661397	1.139751611

Table 8: Participants by Score

FASTalk student (Blank or 1)	1				Total	
	Count of ID	%CT	Count of ID	%CT	Count of ID	%CT
0.0	5	3.09%	1	1.45%	6	2.60%
1.0	15	9.26%	4	5.80%	19	8.23%
2.0	21	12.96%	5	7.25%	26	11.26%
3.0	32	19.75%	7	10.14%	39	16.88%
4.0	34	20.99%	22	31.88%	56	24.24%
5.0	23	14.20%	9	13.04%	32	13.85%
6.0	9	5.56%	7	10.14%	16	6.93%
7.0	11	6.79%	8	11.59%	19	8.23%
8.0	12	7.41%	6	8.70%	18	7.79%
Total	162	100.00%	69	100.00%	231	100.00%

