



COMMONLIT

DIGITAL: EVIDENCE OF EFFECTIVENESS

PREPARED BY AD HOC ANALYTICS, LLC FOR COMMONLIT, INC.



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INTRODUCTION

CommonLit is a nonprofit organization dedicated to ensuring that all students, particularly low-income students, graduate high school with the reading, writing, critical thinking, communication, and collaboration skills necessary to succeed in college and career. To achieve these goals, CommonLit operates a free online reading program at www.commonlit.org for 3rd-12th grade classrooms. On the website, teachers can select lessons and reading passages and assign them to students.

In 2016, CommonLit was awarded a grant from the Department of Education under the Innovative Approaches to Literacy program to develop the online tool and evaluate its effectiveness. This report was prepared by Ad Hoc Analytics, LLC to summarize the key findings of the evaluation efforts between October 2016 and May 2019.





METHODS

This report is based on evaluation conducted by Ad Hoc Analytics between October 2016 and May 2019. To evaluate CommonLit's effectiveness, the research team investigated the following questions:

- Do students who use CommonLit more frequently perform better on CommonLit's grade-level reading assessments?
- Do students who use CommonLit perform better on state standardized English Language Arts (ELA) assessments?
- Do students in low-income (Title I) schools experience greater gains on CommonLit's assessments?

To answer these research questions, Ad Hoc Analytics studied numerous data sets involving millions of rows of data. This report summarizes three salient findings that emerged through their evaluation efforts.



KEY FINDINGS

STUDENTS EXPERIENCE GREATER GAINS WITH INCREASED COMMONLIT USAGE

Ad Hoc Analytics examined student performance on CommonLit reading assignments. For the 157,632 students that completed at least four reading assignments¹ during the 2017-2018 school year, evaluators found that the growth in student performance tended to increase as they completed more CommonLit assignments. These results were statistically significant ($p < 0.001$) for up to 25 assignments (see Appendix A). Exhibit 1 illustrates these findings.

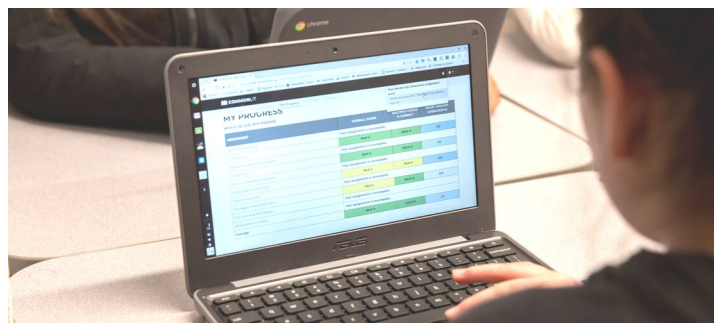
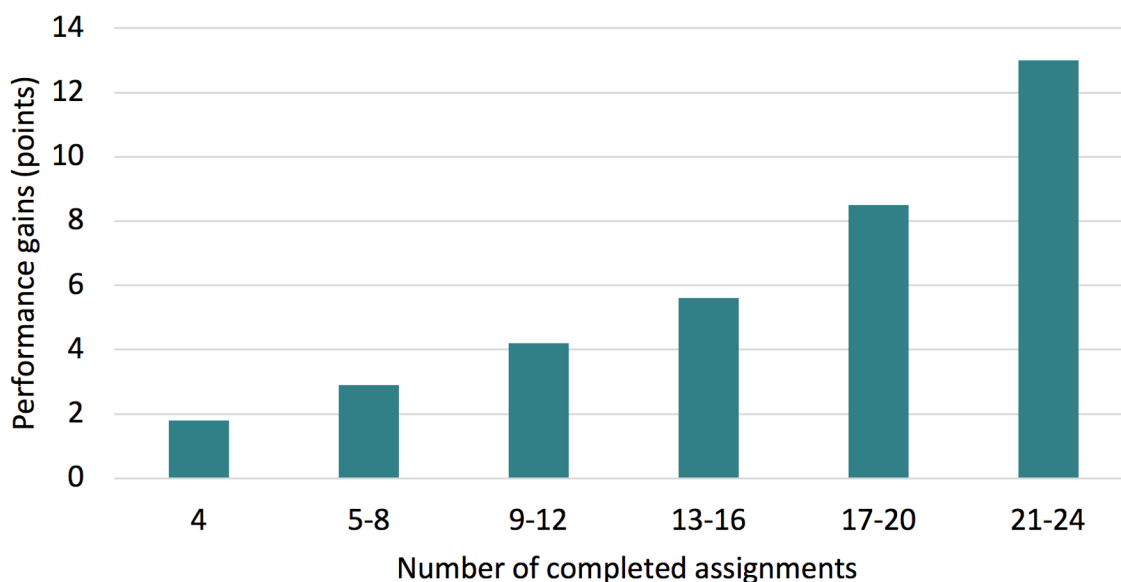


EXHIBIT 1: SCHOOL YEAR GAINS IN READING PERFORMANCE BY NUMBER OF COMPLETED ASSIGNMENTS (2017-2018)



Note: the '25+' category is excluded as this finding was not statistically significant ($p > 0.05$)

¹ The average score of the first two assignments was the baseline measure. The average score of the final two assignments was the follow-up measure. This methodology required a minimum of four completed assignments for each student. Those with fewer completed readings were excluded from analysis.



KEY FINDINGS

INCREASED COMMONLIT USAGE IS ASSOCIATED WITH MORE STUDENTS AT PROFICIENT OR MASTERY LEVEL ON A STATE ASSESSMENT

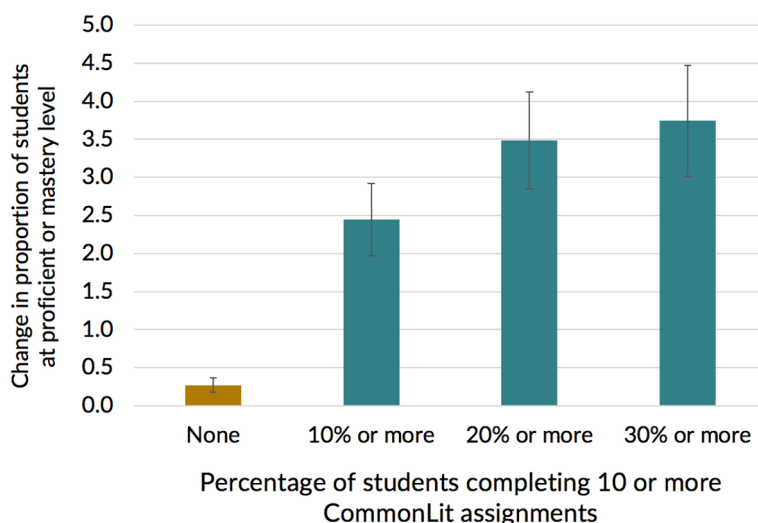
An important next step was to analyze whether CommonLit performance gains measured using CommonLit assignments were meaningful indicators of student performance on standardized state English Language Arts assessments. To measure whether students who used CommonLit did better on state assessments than students who did not, Ad Hoc Analytics studied publicly available data on student performance on the Florida Standards Assessment (FSA). This data is reported by school and grade, so they defined each school and grade as a cohort. Then, they matched this data with CommonLit's school and grade level usage data in Florida.

SUMMARY OF FINDING

Ad Hoc Analytics found that the relationship between CommonLit usage and performance on the FSA varied based on how many CommonLit assignments students completed. Specifically, cohorts in which students used CommonLit at higher levels saw greater improvements in their state assessments compared to cohorts where CommonLit usage was nonexistent or minimal.

Exhibit 2 shows that in schools where a higher proportion of students completed at least 10 CommonLit assignments, a higher proportion of students scored at level 4 or 5 on the FSA compared to the year before. This finding was statistically significant ($p < 0.05$).

EXHIBIT 2: PERCENTAGE OF STUDENTS AT PROFICIENT OR MASTERY LEVEL (FSA) AS A FUNCTION OF COMMONLIT USAGE





DATA SUMMARY

The FSA data included end-of-year English Language Arts (ELA) assessments for the 2016-2017 and 2017-2018 school years. The 2016-2017 data represented the baseline measure of student ELA performance *before* exposure to CommonLit. The 2017-2018 data represented ELA performance *after one year of exposure* to CommonLit for participating cohorts. Ad Hoc Analytics measured CommonLit usage as the percentage of students in each cohort who completed CommonLit assignments. The final dataset contained 7,360 cohorts, of which 1,260 included CommonLit students. These 1,260 cohorts were composed of 150,164 students who completed 695,377 CommonLit assignments.

MODEL

Ad Hoc Analytics used regression analysis to assess the effect of CommonLit usage on the percentage of students in each cohort with high achievement on the FSA. High achievement was defined as scoring at a level 4 (“proficient”) or 5 (“mastery”) on the FSA’s 5-point scale. The model used the following control variables: baseline ELA performance, grade level, and percentages of students in different demographic groups (females, under-represented minorities, English Language Learners, or economically disadvantaged). The final model was found to be a strong predictor of state assessment outcomes, explaining 49 percent of the variance in the percentage of students with high achievement within cohorts (See Appendix B).



KEY FINDINGS

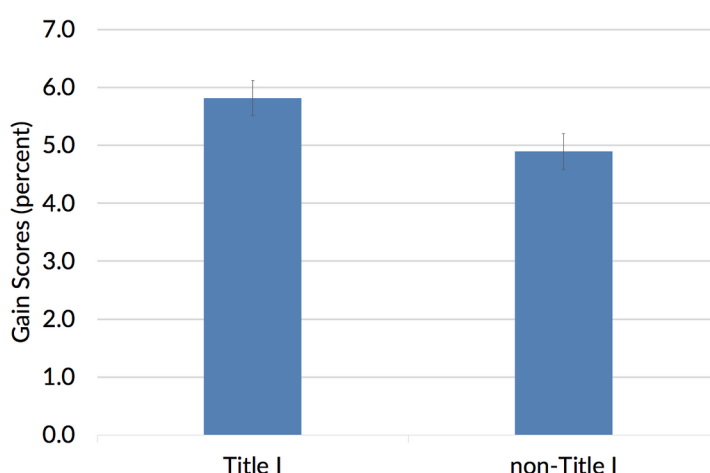
STUDENTS FROM TITLE I SCHOOLS HAVE GREATER GAINS ON COMMONLIT

Earlier research found that at least 59 percent of students using CommonLit come from Title I designated schools or small rural schools (as defined in the federal Small Rural School Achievement program).² Given that CommonLit reaches mostly students in high-need schools, an important next step was to study how it benefits these students.

To determine whether CommonLit might have a special impact on low-income students, Ad Hoc Analytics studied the relationship between Title I status (a school-level characteristic) and student-level growth in performance on CommonLit assignments over the course of the school year. Specifically, evaluators asked whether students from Title I schools had greater gains in CommonLit performance compared to students from non-Title I schools.

Using CommonLit assignment results from the 2017-2018 school year, Ad Hoc Analytics found that students from Title I schools experienced greater gains in reading performance than students from non-Title I schools, as shown in Exhibit 3 ($p = 0.025$, Cohen's $d = 0.042$). Although the effect size was relatively small,³ researchers have argued that outcomes such as this one can be meaningful, particularly when they impact many students.⁴

EXHIBIT 3: GAIN SCORES BY TITLE I STATUS



² Title I is a federal program that provides funding to schools where at least 40% of students come from low-income families. The Small Rural School Achievement program is a federal program for small schools located in areas with low population density.

³ Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

⁴ Glass, G.V., McGaw, B. and Smith, M.L. (1981). *Meta-Analysis in Social Research*. London: Sage.



APPENDIX A

SCHOOL YEAR GAINS IN READING PERFORMANCE BY NUMBER OF COMPLETED COMMONLIT ASSIGNMENTS (2017-2018)

Number of Assignments	Median Difference	Z-test Statistic	Degrees of Freedom/ N	Statistical Significance
4 assignments	1.8	-19.385	62,582	***
5-8 assignments	2.9	-31.621	75,326	***
9-12 assignments	4.2	-17.031	14,492	***
13-16 assignments	5.6	-14.86	3,724	***
17-20 assignments	8.5	-8.92	790	***
21-24 assignments	13	-6.511	412	***
25+ assignments	2.5	-1.502	306	
All assignments	2.81	-42.735	157,632	***

* $p < .05$; ** $p < .01$; *** $p < .001$





APPENDIX B

REGRESSION COEFFICIENTS FOR PREDICTING PERCENTAGE OF STUDENTS WITH HIGH STATE ACHIEVEMENT ON 2017-2018 FSA ELA

	<i>B</i>	<i>SE B</i>	β
Step 1			
Constant	-103.960	4.112	
Assessment Pre	.409	.013	.514 *
Step 2			
Constant	-61.534	5.600	
Assessment Pre	.314	.016	.395 *
Percent of Students with:			
Any CLD Usage	-0.032	0.011	-.048 *
Two to Four Teachers	-.056	.096	-.009
Two Years CLD Usage	-.057	.110	-.007
Economically Disadvantaged Percentage	-.276	.011	-.441 *
English Language Learners (ELL) Percentage	-.020	.021	-.018
Female Students Percentage	.168	.035	.067 *
Minority Students Percentage	.005	.011	.009
Grade 06 Indicator	-3.454	.958	-.051 *
Grade 07 Indicator	-5.731	.515	-.167 *
Grade 08 Indicator	-5.537	.567	-.155 *
Grade 09 Indicator	-9.100	2.859	-.044 *

Note $R^2 = .264$ for Step 1; $\Delta R^2 = .219$ for Step 2 ($p \leq .001$). * $p < .05$.



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