

Greater usage of ThinkCERCA essay assignments related to **higher benchmark assessment performance** of elementary, middle, and high school students



ThinkCERCA contracted with LearnPlatform by Instructure, a third-party edtech research company, to examine the relationship between student usage of ThinkCERCA assignments and benchmark assessment outcomes for Grade 4-12 students (n = 1,488) in eight school districts during the 2022-23 school year. The following document summarizes results and outlines the study sample and methodology. The analysis team is continuing efforts to expand the sample to include more students (particularly at the elementary level) and to incorporate student-level demographic characteristics to further contextualize these preliminary findings.

Sample

Students included in the study were those who completed ThinkCERCA assignments and professionally scored benchmark assessments at the beginning, mid-point, and end of the 2022-23 school year. School-level demographics for the sample are summarized below.

	Elementary (n = 219)	Middle (n = 689)	High School (n = 580)
Number of schools	2	5	14
Number of teachers	4	8	37
Average percentage of English learners	4.63%	8.70%	9.68%
Average percentage of students with 504 status	1.02%	2.42%	1.62%
Average percentage of students with free/reduced price lunch	35.72%	72.63%	81.00%
Average percentage of non-white students	15.73%	51.44%	56.94%

Methods

Researchers conducted multilevel regression models with students nested within teachers nested within schools to examine how ThinkCERCA use related to students' benchmark assessment performance at the end of the school year. Analyses controlled for prior achievement (fall and winter benchmark scores). The analyses included school-level demographic covariates (i.e., percentage of free/reduced price lunch, 504 status, and English learner students) to minimize selection bias.

Key Terms

- **Statistically significant:** Determination that a relationship between two or more variables is caused by something other than chance. ESSA defines significance as a p-value of 0.05, indicating a 95% probability that the observed relationship is not due to chance.
- **Effect size:** A measure of the magnitude of the relationship between groups that indicates the practical significance of a statistical result. Hedge's g is a standardized measure of effect size that corrects for small sample sizes.
- **Null results:** Analyses that fail to detect a statistically significant relationship between variables of interest.

Elementary School Findings

The findings for elementary school students meet ESSA Level III (Promising Evidence) standards given the positive, statistically significant relationships between ThinkCERCA usage and student benchmark performance in Grades 4 and 5.



- ◆ On average, elementary students (n = 219) completed about four ThinkCERCA assignments during study period (M = 4.18, SD = 2.23).
- ◆ Overall, submission of ThinkCERCA assignments had a positive, statistically significant effect on elementary student benchmark assessment performance (p = 0.02). Among grade 4 and 5 students, submission of 5 or more assignments during the study period was associated with a moderate positive effect on end-of-year performance (Hedge's g = 0.22).
- ◆ Further exploration of rubric subscales found that submission of more assignments was significantly associated with improved performance on three of five subscales: claims, audience, and coherence (p's < 0.05).
- ◆ There was a trending positive relationship between number of assignments completed and the evidence subscale (p = 0.10). Analyses of the relationship between number of assignments submitted and performance on the reasoning subscale yielded null results.

Middle School Findings

The findings for middle school students meet ESSA Level III (Promising Evidence) standards given the positive, statistically significant relationships between ThinkCERCA usage and student benchmark performance in Grades 6, 7, and 8.



- ◆ On average, middle school students (n = 689) completed about five ThinkCERCA assignments during study period (M = 5.13, SD = 2.96).

- ◆ Overall, submission of ThinkCERCA assignments had a positive, statistically significant effect on elementary student benchmark assessment performance ($p < 0.001$). Among grade 6, 7, and 8 students, submission of 8 or more assignments during the study period was associated with a moderate positive effect on end-of-year performance (Hedge's $g = 0.24$).
- ◆ Further exploration of rubric subscales found that submission of more assignments was significantly associated with improved performance on all five subscales (claims, evidence, reasoning, coherence, and audience (p 's < 0.05)).

High School Findings

The findings for elementary school students meet ESSA Level III (Promising Evidence) standards given the positive, statistically significant relationships between ThinkCERCA usage and student benchmark performance in Grades 9, 10, 11, and 12.



- ◆ On average, high school students ($n = 580$) completed about nine ThinkCERCA assignments during the study period ($M = 8.53$, $SD = 9.77$).
- ◆ Overall, submission of ThinkCERCA assignments had a positive, statistically significant effect on high school student benchmark assessment performance ($p < 0.001$). Among grade 9-12 students, submission of 8 or more assignments during the study period was associated with a small positive effect on end-of-year performance (Hedge's $g = 0.10$).
- ◆ Analyses of the relationship between number of assignments submitted and performance on individual writing benchmark subscales yielded null results.