

Greater usage of Paper essay feature related to higher ELA achievement in grades 7, 9 and 10

Paper contracted with LearnPlatform by Instructure, a third-party edtech research company, to examine the relationship between student usage of Paper's tutoring platform and learning outcomes for Grade 6-12 students in Hillsborough County Public Schools (HCPS), FL during the 2021-22 and 2022-23 school years. The following document highlights study findings and outlines the study samples, measures, and methods.



Findings

2021-22 Findings: Florida State Assessment (FSA)

- ★ Overall, for Grades 7, 9, and 10, students who submitted more essays for Paper review had higher spring Florida State Assessment (FSA) ELA achievement (statistically significant relationships p 's < .05).
 - Grades 7, 9, and 10 **students with free and reduced lunch (FRL) status who submitted more essays for Paper review had higher spring FSA ELA achievement** (statistically significant relationships p 's < .05).
 - Grades 7, 9, and 10 **students that identified as Hispanic, who submitted more essays for Paper review had higher spring FSA ELA achievement** (statistically significant relationships p 's < .05).
- ★ Overall, for Grade 7, students who downloaded more essays after Paper review had higher spring FSA ELA achievement. This relationship was significant ($p = .04$). For Grade 10, students who downloaded more essays after Paper review had higher spring FSA ELA achievement. This relationship was trending towards statistical significance ($p = .05$).
 - Grades 9 and 10 **students with free and reduced lunch (FRL) status who downloaded more essays after Paper review had higher spring FSA ELA achievement** (statistically significant relationships p 's < .05).
 - Grades 10 **students that identified as Hispanic, who downloaded more essays after Paper review had higher spring FSA ELA achievement**. This relationship was significant ($p = .00$).
- ★ Overall, Paper usage was low with students averaging 1.8 ELA sessions, 3.2 Math sessions, 1.6 essays submitted and 1.1 essays downloaded.
- ★ There were no overall, statistically significant relationships between the number of Paper ELA tutoring sessions and student ELA achievement.

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- ★ There were no overall, statistically significant relationships between Paper math tutoring sessions and student math achievement. However, Grade 7 students with free and reduced lunch (FRL) and English language learner (ELL) status who completed more math tutoring sessions had higher spring FSA Math achievement (statistically significant relationships p 's < .05).

The findings from 2021-22 meet ESSA Level III (Promising Evidence) standards given the positive, statistically significant relationships between Paper usage and student ELA achievement in grades 7, 9 and 10.

2022-23 Findings: Florida Assessment of Student Thinking (FAST)

- ★ For a subset of Grade 10 students from two high schools that used Paper the most, students who downloaded more essays after Paper review had higher spring ELA achievement as measured by the Florida Assessment of Student Thinking (FAST). This was a statistically significant relationship ($p = .05$).
- ★ Overall, Paper usage was low with students averaging 1.6 ELA sessions, 2.3 Math sessions, 1.2 essays submitted and 0.8 essays downloaded.
- ★ When examining the full sample of students, the following relationships were not statistically significant: a) number of Paper ELA tutoring sessions and student ELA achievement, b) number of essays submitted and student ELA achievement, and c) Paper math tutoring sessions and student math achievement.

About the Study

Sample

2021-2022. HCPS students who used Paper in the 2021-22 school year ($n = 9,633$ students across 122 schools) were enrolled in the following grades: Grade 6 (14%), Grade 7 (19%), Grade 8 (16%), Grade 9 (23%), Grade 10 (16%), and Grade 11 (11%). The sample included the following student demographics: 7% Asian, 19% Black, 31% Hispanic, <1% Native American, 36% White, and 6% Multiracial.; 58% identified as female; 5% of the sample were English Language Learners, and 48% of the sample was eligible for free or reduced lunch.

2022-2023. HCPS students who used Paper in the 2022-23 school year ($n = 4,686$ students across 97 schools) were enrolled in the following grades: Grade 6 (14%), Grade 7 (18%), Grade 8 (16%), Grade 9 (22%), Grade 10 (16%), Grade 11 (9%), and Grade 12 (4%). The 2022-2023 students had similar demographics to the prior school year and included the following: 8% Asian, 16% Black, 35% Hispanic, <1% Native American, 35% White, and 6% Multiracial; 59% of the sample identified as female, 3% of the sample were English Language Learners, and 11% of the sample was eligible for free or reduced lunch.

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Measures

Usage. Researchers utilized 2021–22 and 2022–23 student-level usage data (i.e., total number of tutoring sessions, total number of essays submitted for review, and total number of essays downloaded post-review). Paper codes tutoring sessions by subject area (i.e., math and ELA tutoring sessions) and researchers used these data in subject-specific analyses for math and ELA outcomes, respectively.

Outcomes. Researchers used Spring 2022 FSA ELA and Math scale scores to evaluate the outcome for the 2021-22 same (Sample 1) and Fall 2022 and Winter 2023 FAST ELA and Math scale scores were used for the 2022-23 sample (Sample 2). Neither FSA nor the FAST measure have been vertically scaled across grade levels; therefore, researchers conducted analyses separately by grade.

Methods

Researchers conducted partial correlations to examine how Paper use related to students' ELA and math outcomes in the spring, controlling for prior achievement (i.e., fall test scores). The analyses included student-level covariates (i.e., gender, race, ethnicity, ELL status, FRL status) to control for potential selection bias.